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THE RELATIONSHIP OF EGO-ININVOLVEMENT TO
MESSAGE PERCEPTION AND RETENTION

DISSERTATION
Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By
Robert Steven Ambler, B.A., M.A.

***

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iii
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>VITA</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>vii</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. EGO-INVOLVEMENT IN THE STUDY OF COMMUNICATION</td>
<td>1</td>
</tr>
<tr>
<td>Relevance of Ego-Involvement to Communication Problems in Studying Ego-Involvement</td>
<td></td>
</tr>
<tr>
<td>II. MAJOR VARIABLES</td>
<td>10</td>
</tr>
<tr>
<td>Ego-Involvement</td>
<td></td>
</tr>
<tr>
<td>Selective Recall</td>
<td></td>
</tr>
<tr>
<td>Overall Recall of Controversial Material</td>
<td></td>
</tr>
<tr>
<td>Displacement of Message Position</td>
<td></td>
</tr>
<tr>
<td>Dogmatism</td>
<td></td>
</tr>
<tr>
<td>III. RELATIONSHIPS AMONG MAJOR VARIABLES</td>
<td>45</td>
</tr>
<tr>
<td>Ego-Involvement and Selective Recall</td>
<td></td>
</tr>
<tr>
<td>Ego-Involvement and Overall Recall</td>
<td></td>
</tr>
<tr>
<td>Ego-Involvement and Message Displacement</td>
<td></td>
</tr>
<tr>
<td>Ego-Involvement and Dogmatism Dogmatism and the Dependent Criteria</td>
<td></td>
</tr>
<tr>
<td>IV. METHODOLOGY</td>
<td>53</td>
</tr>
<tr>
<td>Hypotheses</td>
<td></td>
</tr>
<tr>
<td>Measures</td>
<td></td>
</tr>
<tr>
<td>Stimulus Message</td>
<td></td>
</tr>
</tbody>
</table>

iv
**LIST OF TABLES**

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Analyses of Variance for Degree of Measured Involvement.</td>
<td>71</td>
</tr>
<tr>
<td>2.</td>
<td>Mean Latitude of Rejection</td>
<td>72</td>
</tr>
<tr>
<td>3.</td>
<td>Analyses of Variance for Message Placement</td>
<td>74</td>
</tr>
<tr>
<td>4.</td>
<td>Correlations of Attitude with Placement of Speaker's Position</td>
<td>78</td>
</tr>
<tr>
<td>5.</td>
<td>Analyses of Variance for Message Recall</td>
<td>81</td>
</tr>
<tr>
<td>6.</td>
<td>Analysis of Variance of Overall Recall</td>
<td>85</td>
</tr>
<tr>
<td>7.</td>
<td>Correlations of Involvement with Overall Recall</td>
<td>86</td>
</tr>
<tr>
<td>8.</td>
<td>Correlations of Attitude with Recall of Pro-Material</td>
<td>90</td>
</tr>
<tr>
<td>9.</td>
<td>Correlations of Attitude with Recall of Con-Material</td>
<td>91</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1.</td>
<td>Mean recall of different types of material</td>
<td>88</td>
</tr>
</tbody>
</table>
CHAPTER I
EGO-INInvOLVEMENT IN THE STUDY
OF COMMUNICATION

During the past twenty years scholarship in Speech Communication has focused on the listener's characteristics in studying the effects of messages. In a recent essay Miller categorized the variables determining message impact as Information 1 and Information 2, the former referring to those variables which constitute the external, environmental stimuli impinging upon the listener and the latter referring to the listener's cognitive structure.\(^1\) He has suggested that the most interesting generalizations regarding human information processing will come from studies investigating the interaction between the two. Such a view emphasizes the need for multi-factor designs which include important audience variables. This added complexity should

allow the scholar to more closely approximate the real world situation thereby increasing the validity of generalizations based on results.

Speech scholars have not neglected the variable of the audience in the past, however. From Aristotle to the present, great concern with understanding the audience and adapting messages to them has been evident. Most of this research and concern, though, was not empirical. Only during the twentieth century have the tools of statistics and experimental design been applied to the study of significant questions about communication.

Relevance of Ego-Involvement to Communication

The importance of a message's topic to an audience has been considered especially significant in determining message impact. It is not surprising, therefore, that the social-judgment approach to attitudes with its emphasis on the key concept of "ego-involvement" and on "frames of reference" has been so readily accepted

The approach suggests that ego-involvement, which has been alternatively viewed as the personal relevance or importance of an issue, is an internal variable which mediates the effects of external stimuli; specifically, it predicts that ego-involved persons will change less than non-involved persons in response to belief-discrepant messages about the issue.

The relevance of ego-involvement for communication is multiple. Its primary role in most investigations has been as a mediating variable altering the effect produced by external communication variables.

Ego-involvement has also been an important mediating variable in studies of group communication.


4 The view of ego-involvement as an internal variable is based on its most common interpretation. Actually, ego-involvement is more a situational than an internal variable; discussion of this criticism is elaborated under "Theoretical Implications" in Chapter VI.

One recent study hypothesized that in comparison to non-involved persons, those who were ego-involved in the topic of a discussion would make more leadership moves.\(^6\) While the reverse of the hypothesized relationship was observed, the investigation points to the significance of the social-judgment approach to the understanding of communication and associated phenomena. Sereno and Mortensen have shown that ego-involvement of persons engaged in negotiation over some issue is an important determinant of whether the parties are able to reach a compromise.\(^7\) Specifically, dyads of non-involved persons came to a mutual compromise more often than dyads of persons who were ego-involved in the topic of negotiation.

Ego-involvement has not only been an important intervening variable in communication research, as these citations suggest, but it has also served as a dependent variable in studies which attempted to arouse audience involvement on some issue. One of the ways in which ego-involvement has been investigated is through


\(^7\)Sereno and Mortensen, "The Effects of Ego-Involved Attitudes on Conflict Negotiation in Dyads," pp. 8-12.
the use of instructions from the experimenter to heighten a task's relevance for the subject; by attempting to manipulate ego-involvement in a topic, researchers assume that it can be enhanced by communication. Most studies have not attempted to validate whether such instructions are successful in producing higher levels of ego-involvement; the findings of the few that have made the attempt are somewhat ambivalent. Miller tried to induce ego-involvement by: (1) having the experimenter discuss the importance of the issue, (2) presenting subjects with a statement supporting their stand on an issue, (3) having subjects write a statement supportive of their own stand, and (4) having subjects pledge to distribute materials on the issue. Persons receiving the experimental manipulation were less persuaded by a subsequent message than persons who did not undergo the ego-involvement manipulation. In addition, Miller used measures of ego-involvement which had been previously validated by Sherif, latitudes of acceptance and latitudes of rejection, to determine if persons in the high involvement group differed from persons in the low involvement group on the independent measure of ego-involvement. The results showed no statistically

---

8Norman Miller, "Involvement and Dogmatism as Inhibitors of Attitude Change," Journal of Experimental Social Psychology, 1 (May, 1965), 121-32.
significant differences between the latitudes of rejection or the latitudes of acceptance for subjects in the high involvement treatment versus those in the low involvement treatment. Thus, while his manipulation of ego-involvement produced differential attitude change, no difference in ego-involvement between the two treatment groups was reflected by one of the most frequently used measures of ego-involvement.

Rhine and Severance and Rhine and Polowniak in separate studies demonstrated that for an issue that was highly ego-involving to subjects versus one that was not, there was less attitude change produced by a belief-discrepant message. They also found an increase in ego-involvement (as measured by ratings of importance) with the low involvement issue, this increase being associated with the attitude change produced by the message. This second set of studies seems to suggest that a communication can increase ego-involvement in an issue, whereas Miller's results do not. It is important to remember, however, that Miller's study used

---

latitudes of acceptance and rejection for validating the manipulation of ego-involvement, whereas the latter studies used ratings of topic importance as the measure of involvement. The question of how and under what conditions a message can lead to greater ego-involvement, these studies indicate, is one which requires further study.

Problems in Studying Ego-Involvement

In spite of the potential significance of ego-involvement to communication theory, there are several unresolved issues in any attempt to use the variable as a viable concept in theory building. These can be categorized into three broad groups of questions. The first set asks how we shall conceptualize ego-involvement. How should ego-involvement be defined? Does it operate in situations that are supportive of the individual's position, or does it exist only in situations which are threatening to the person? May ego-involvement be considered involvement with a specific behavioral response, such as performance on an IQ test, or is ego-involvement only associated with attitude toward a controversial issue, reference group, or person? Is ego-involvement time and situation bound? Can it be broken into elements, and if so which ones? These questions represent some of the current difficulties
which exist in conceptualizing the variable.

A second set of questions which are more serious than the first, but bound to them, raise the question of operationalizing the variable. How closely do measures of ego-involvement correspond to conceptual definitions? To what extent do the different measures of ego-involvement measure the same variance? How may the components of involvement be weighted to produce the most valid and reliable measure? Several recent studies have been concerned with these issues, and their common conclusion is that there are measurement difficulties which warrant greater effort. 10

A final group of issues deals with the relationships between ego-involvement and psychological concomitants, such as attitude change or recall of controversial material. The theoretical relationship between ego-involvement and attitude change has been investigated more than any other. The relationship between ego-involvement and other concomitant variables such as perception of the position of a message and recall of a controversial message about one's object of involvement have received only little study.

Based on a consideration of the difficulties with the conceptualization and measurement of ego-involvement developed in Chapter II, this study will attempt to answer two questions which are relevant to the issues I have mentioned. First, to what extent is ego-involvement an important variable in predicting the psychological behaviors of message displacement, greater overall recall, and selective recall (superior recall of attitude-consonant material over attitude-dissonant material)? While the social-judgment approach offers theoretical predictions concerning the relationship between ego-involvement and the recall of controversial material, as well as systematic misplacement of a controversial message, little empirical research has been conducted on these variables. A comprehensive theory of communication will explain learning effects as well as attitude change.

The second research question raised by this study is: Can a new measure of ego-involvement, based on the degree to which an issue is perceived as related to important values, be developed which will be superior to presently available measures in predicting the theoretical concomitants of ego-involvement? The rationale for this new measure will be developed in Chapter II.
CHAPTER II

MAJOR VARIABLES

This chapter will review the literature relevant to each of the major variables in the study, including the dependent variables of selective recall, overall recall, and message displacement, the independent variable of ego-involvement, and the control variable of dogmatism. Each of the variables will be discussed at the conceptual level first, and then efforts to measure it will be described. Chapter III will review the literature relevant to the relationships among the variables.

This study is partially concerned with validating a new measure of ego-involvement, and the review will begin there.

Ego-Involvement

Ego-involvement has usually been defined as the degree to which some issue, group, object, or situation is perceived by the individual as being related to his self system. During the first half of the twentieth century, a number of psychologists became interested in
ego-involvement's effect on memory, learning, problem solving, perception, and other cognitive phenomena.\textsuperscript{1} Ego-involvement was conceptualized in most of these early studies as "manifest in situations which threaten the individual's valued self-identity, his feelings of personal importance, or his personal status."\textsuperscript{2} Thus, ego-involvement as seen in these early studies depended on the situation and occurred only when a person's important beliefs and feelings were threatened, not in situations where they were positively involved.

Sherif developed an approach to the perception of social events and issues which was interpreted by some in a limited perspective of attitude and attitude change; this approach relied heavily upon the concept of ego-involvement. His conceptualization was similar but not identical to that of Iverson and Reuder. Sherif drew on the psychoanalytic and the experimental psychologists' approaches to the study of people's behavior, but also employed anthropological and sociological


\textsuperscript{2}Iverson and Reuder, "Ego Involvement as an Experimental Variable," p. 149.
perspectives. He emphasized the situational character of ego-involvement. Before his full length book on ego-involvement with Cantril, he explored the nature of the ego in a 1936 treatise:

Values are the chief constituents of the ego. Among these, social values, which are socially established affective fixations, form the major (directive) part. These values are the social in man.  

Ten years later, he more fully delineated the concept, relating it to group behavior. He wrote that the components of ego-involvement include:

... the individual's body and physical characteristics; the things he learns belong to him ... together with a whole host of social values he also learns and with which he identifies himself ... 

In spite of the relative similarity of the norms to which an individual in a given society or group may be exposed, the content of any single individual's ego, what he regards as himself, is a rather distinct constellation of social and personal values that vary not only in their number and nature, but also in the intensity with which they are held.

These contents of the ego, these things, persons, ways of conducting oneself, social norms of various kinds, provide for the individual the standards of judgment or frames of reference which determine to such an important degree his social behavior and reactions. And when any stimulus or situation is consciously or unconsciously related to them

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by the individual, we can say there is ego-involvement.4

by the individual, we can say there is ego-involvement.4

This passage emphasizes the situational nature of ego-involvement and indicates that the intensity with which a value is held is a very important aspect. Thus, Wilmot suggested that Sherif equated attitude intensity with involvement.5 Iverson and Reuder restricted ego-involvement to threatening situations, but Sherif conceived it as related to important self-values and positive aspects of the social situation as well.

In recent works, Sherif conceptualized ego-involvement as synonymous with the importance or relevance of an issue to a person.6 Perhaps the clearest statement is offered in his most recent book on social psychology:

Ego-involvement refers to the arousal of a situationally relevant ego-attitude, whose participation in ongoing psychological activity generates modes of behavior that are more consistent, more selective, and


more characteristic of the person in that respect.

Not only does this definition emphasize the situational character of ego-involvement, but it more clearly defines its behavioral concomitants, allowing more precise validation for any particular method of measuring the construct.

Wilmot examined the concept of ego-involvement with the purpose of validating the various measures of ego-involvement through resistance to attitude change and concluded: "At this point in time, it is impossible to define ego-involvement precisely." He criticized Sherif's concept saying it was a function of many different variables, including: (1) the willingness to join a social group that is concerned with a topic, (2) the amount of social support one has for his position, (3) an unknown personality variable associated with joining extreme groups, (4) the amount of information one has on an issue, (5) the strength of emotional feeling on an issue, and (6) how publicly one is committed to his position on an issue.

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7 Sherif and Sherif, Social Psychology, p. 387.
9 Ibid., pp. 435-36.
While it is possible that ego-involvement is related to all these variables, it need not be defined in terms of any of them. There appears to be some confusion on Wilmot's part, for though ego-involvement may be operationalized in many ways, these measures may all relate to one concept. Wilmot found that none of the operational measures which he used helped predict who would change attitudes and confused operational measures with conceptual dimensions. While definitions of ego-involvement vary, Sherif's concept of involvement as the situational state in which an object, person or event is related to a person's important beliefs or values seems clear enough. The greater problem seems to lie in developing measures which will test the theoretical concomitants of ego-involvement, those being more consistent, selective, and characteristic personal behaviors.

The term ego-involvement will be used in this study to refer to Sherif's concept of it, that is, ego-involvement is the contextual arousal of the relationship between a person and his important values, groups, or attitudes. Ego-involvement has generated a number of operational definitions though recent studies cast doubt on the

validity of some of these. They include:

1. Latitudes of rejection, acceptance, and noncommitment. (Ordered alternatives)
2. The own categories technique.
3. Diab modification of the ordered alternatives method using the semantic differential.
4. Extremity of attitude position.
5. Ratings of the degree of commitment to one's most acceptable position.
6. Ratings of personal importance of issue to the person.
7. Ratings of social importance of the issue to the person.
8. Ratings of centrality of the issue to the person.
9. Ratings of amount of time the person spends in thinking about the issue.

The first three of these measures are based on pioneer work by Sherif. All three rely on characteristic perceptual behaviors of the ego-involved person and have been shown to be related to other psychological variables such as attitude change. The other measures have been used much less frequently.

The first three methods of measuring ego-involvement are less self-explanatory than the others, and they have been previously summarized. The ordered alternatives method requires an orderable scale of attitude positions ranging from a highly favorable to a highly opposed view toward the object of involvement. The subject responds to these different attitude statements

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11Ibid. and Ruth Anne Clark and Roy Stewart, "Latitude of Rejection as a Measure of Ego Involvement," pp. 228-34.

in terms of an acceptance-rejection dimension by indicating the following: (1) the position which is closest to his own, (2) other acceptable positions, (3) the statement to which he most objects, and (4) any other statements to which he also objects. Three separate but related indices are computed from these responses, each reflecting in varying degrees a person's involvement with the issue. These indices are latitude of rejection, consisting of the most objectionable position plus any other statements which a person rejects, latitude of acceptance, consisting of the most acceptable position plus any other position which a person accepts, and latitude of noncommitment, consisting of all those positions which a person neither accepts or rejects.

Early studies conducted by Sherif, in which he compared groups known to be involved, on the basis of external behavioral criteria, with groups known not to be involved in an issue, showed that involved persons tended to reject more attitude positions and be non-committed on fewer attitude positions than non-involved persons. The latitude of acceptance did not differentiate between involved and non-involved subjects.

\[13\] For a summary of the results of these early studies see Sherif, Sherif and Nebergall, Attitude and Attitude Change, pp. 18-59 and Sherif and Sherif, Social Psychology, pp. 355-67.
Based on these studies, Sherif concluded that the best single measure of ego-involvement was the size of the latitude of rejection. Cegala attempted to create a single measure of ego-involvement which took into consideration all three latitudes.\textsuperscript{14} He found no evidence that this combined measure was in any way superior to the latitude of rejection alone.

The second method developed by Sherif was the own categories technique.\textsuperscript{15} This approach consisted of selecting a number of attitude positions (usually twenty-five or more) on an issue and asking subjects to categorize these positions into what they perceived as an appropriate number of groups to represent the entire continuum from favorable to unfavorable. The number of categories to be used was not specified, and the method required a sufficient number of ambiguous statements that could be easily displaced. Findings by Sherif and his associates indicated that persons who came from groups ego-involved in the issue tended to use fewer categories than those who were not involved with the issue. Involved persons, when asked to label


\textsuperscript{15}See Sherif, Sherif and Nebergall, \textit{Attitude and Attitude Change}, pp. 92-126.
each of the piles of statements in terms of whether they accepted or rejected them, tended to have an inordinate number of statements in the categories which they rejected. Thus, number of categories used and the degree to which statements were stacked up in a pile on the end of the scale opposite to one's own position served as indices indicating high ego-involvement.

Diab has modified the ordered alternatives method of measuring ego-involvement by combining it with the semantic differential. He developed an instrument which required less work in developing a measure for any particular issue since one does not have to create, collect, or gather a set of representative statements on an issue and then validate the orderability of the set. This method requires responses to semantic differential scales which indicate that scale value which is the most acceptable, those values that are also acceptable, and those which are objectionable. These responses can be converted into latitudes of acceptance, rejection, and noncommitment in the same way they are in the ordered alternatives method, and the same perceptual concomitants are assumed.

The three measures described above assume that the perceptions of ego-involved persons are different from those of non-involved persons. This assumption is basic to the social-judgment approach. Ego-involved persons are more likely to see the world of their involvement in black and white terms; they are less likely to discriminate between positions distant from their own; and they are more likely to lump opposing positions, regardless of their degree of extremity, into one category. Their own attitude position plays an important role in their perception of others' attitudes because it serves as a strong anchor.

While earlier research has supported the validity of these previously mentioned measures, recent studies have cast some doubt on their usefulness. These studies have noted that the original investigations validating the traditional measures of ego-involvement compared groups of persons known to be involved on an issue with persons known not to be involved on the same issue. In addition, the known groups differed in more ways than degree of involvement on the issue. These groups differed in their age, their level of education, and their education.

and probably in the degree of cognitive rigidity. Thus, it was argued that ego-involvement was not the only variable which could account for the different perceptual characteristics observed for the different groups used in the earlier studies. In addition, some have found these traditional measures not to be associated with theoretically predictable concomitants of ego-involvement, such as consistency of behavior as exhibited by increased resistance to attitude change. Wilmot found no significant relationship between attitude change and level of ego-involvement as measured by the three measures previously described or as measured by ratings of personal importance, social importance, commitment to one's own position, or extremity of own position.¹⁸

Wilmot's study, however, suffered from design problems. Ego-involvement was measured prior to the main session, during which the message was presented. If, as Sherif suggests, ego-involvement is to be considered the situational arousal of important self-values, then involvement should be more highly aroused after hearing a belief-discrepant message than after filling out an attitude questionnaire. Once again, whether ego-involvement can be increased by messages becomes salient.

¹⁸ibid.
It would appear more appropriate to measure ego-involvement after the message. The approach in design that Wilmot takes is appropriate if ego-involvement is considered as issue involvement regardless of the situation, but this is inconsistent with Sherif's conception.

A second difficulty with Wilmot's study is that subjects were asked to provide many different responses, allowing the construction of seven measures of ego-involvement. 19 This inordinate number of judgments may have increased the artifactual nature of the study and reduced the motivation of the subjects, which could have increased the probability of a Type II error. 20

Finally, Wilmot did not report the variances in his measures, a critical matter. If the subjects in his sample were all either very highly ego-involved or all very lowly involved in the issue of the message, then differences in ego-involvement would not have been sufficient to allow prediction of who would be most likely to change attitude.

Miller, who manipulated involvement, found that groups who were induced to exhibit different levels of ego-involvement showed no difference in the size of

19 Ibid., p. 220.

their latitudes of rejection or acceptance; they did exhibit, however, different amounts of attitude change in the expected direction, once again casting doubt on latitude of rejection as a measure of involvement.  

In addition to the traditional measures of ego-involvement, rating scales have been used to operationalize the concept. Wilmot found that these measures were, like others, unrelated to the degree of attitude change produced by a belief-discrepant message. Moreover, these ratings of importance, centrality, and commitment were not highly related to one another or to the traditional measures. Finally, they have the disadvantage that they allow the subject to impose a simplistic judgment on a phenomenon that may be multidimensional.

What can be made of these conflicting findings? It is possible that the traditional measures of ego-involvement, because of their validation in studies which contained methodological defects, are not very important predictors of the kinds of psychological behaviors to which the concept of ego-involvement is theoretically related. It is also possible that the

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21 Norman Miller, "Involvement and Dogmatism as Inhibitors of Attitude Change," pp. 121-32.

recent studies challenging the construct validity of the traditional measures have suffered from methodological defects, themselves, thus negating their significance. Design difficulties occurred in both the older and the more recent studies. Therefore, it seems wise to replicate previous studies while at the same time correcting for some of the design defects. Further, it also seems desirable to devise an alternative for measuring ego-involvement which is more directly related to the conceptual definition, yet not so simplistic as the rating scales. Such a method will now be proposed.

The proposed alternative for measuring ego-involvement offered here will be referred to as the value-functional measure of involvement. It arises from Rosenberg's cognitive index, which has been used as a measure of attitude, and a review of Rosenberg's work in measuring attitude is therefore in order.23 Rosenberg suggested that attitudes may be viewed as having three components: cognitive, affective, and behavioral. He hypothesized that changes in any one of these components would produce dissonant forces that

would lead to a realignment of the others. For example, changes in a person's beliefs about what the results of legalizing marihuana would be (cognitive change) should result in change in his feelings about legalization (affective change). In an inverse fashion, changes in a person's feelings about an object should be accompanied by consequent changes in his beliefs about that object. While this latter situation seems unusual, Rosenberg succeeded in creating it by inducing affective change under hypnosis, which produced changes in subjects' beliefs. 24

Rosenberg developed a measure of attitude based on both cognitive and affective elements. The method required subjects to make cognitive judgments about what kind of goals they thought a particular policy would lead to or block as well as making affective judgments about whether they thought those particular goals were desirable or not. Rosenberg collected a list of possible goals which a person might choose to work toward and asked subjects to rate the degree to which they saw these goals as being desirable or undesirable (value ratings) and the degree to which a certain social policy would either accomplish or block those

goals (instrumentality ratings). He multiplied the instrumentality rating by the value rating for each statement of goal and summed these signed products over all the different statements of goal or value; this produced a single signed value which he called the cognitive Index, and which was shown to be highly related to an independent measure of attitude (ratings on a Likert type scale).\textsuperscript{25}

While the cognitive Index is a measure of attitude indicating both direction and extremity, I believe it can be modified to produce a measure of ego-involvement. This modification requires us to view the individual value-instrumentality products as separate forces pushing a person toward or away from accepting a particular social policy. Persons who have a large number of individual forces pushing them toward or away from accepting a policy probably have more stable perceptions about the issue and so are probably more involved. Therefore, the sum of the absolute values of the individual forces will be used as a measure of ego-involvement.

One might ask: Why use the sum of the absolute values of the individual forces rather than the absolute value of the cognitive index? The latter technique is

easier to calculate, but it would obscure the situation in which the individual has about an equal number of forces pushing him toward either accepting or rejecting the proposed social policy. When this happens, the person may be and probably is involved in the issue, but the use of the absolute value of the cognitive index would obscure that since the directional sum of his individual forces would be close to zero. By summing the absolute values of the individual products, the measure allows for the possibility of ego-involvement in a middle position.

This proposed value-functional measure of ego-involvement is also deducible from another line of research, an orientation more allied with laboratory experiment. Ostrom and Brock have developed what they have called a value-bonding model based on Sherif's original construct of ego-involvement.26 The value-bonding model more analytically outlined the major elements of ego-involvement. The model stated that attitudes would be more ego-involving to a person to the extent

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that: (1) the attitude was bonded or related to important values rather than peripheral values (centrality),
(2) the attitude was seen as being strongly related to the attainment of the value (relatedness), and (3) the
attitude was related or bonded to a larger number of important values (number). These three components of
ego-involvement, centrality, relatedness, and number, have been manipulated experimentally to test the validity
of the model. One of the specific predictions was that a person who related a message to central values would
be less susceptible to subsequent attempts to change his attitude. This hypothesis has been repeatedly confirmed
in the laboratory.27

The difference between the approach taken by studies using the value-bonding model and the approach taken

in the present study is that the former manipulated ego-involvement by having subjects associate important values with a position on an issue while this investigation used degrees of involvement already existing for the subjects.

**Selective Recall**

When used in this study, the terms overall recall and selective recall are used to refer respectively to the amount of information and the type of information recalled from a message or a set of messages; the term message refers to a symbolic stimulus, in this study primarily verbal, which deals with a single issue. This clearly excludes the recall of nonsense syllables, or other such stimuli in which persons are not likely to be differentially ego-involved.

The question of the effect of attitude on human memory has a long history of empirical research. Freud's initial ideas about repression helped to generate interest in selective recall, or the tendency to recall attitude-consonant material better than attitude-dissonant material.

In the earliest studies of selective recall conducted during the 1920's and 1930's, researchers were most concerned with the question of how the degree of pleasantness of a stimulus situation affected its recall.
Thus, Laird and Gilbert hypothesized and confirmed that people would recall pleasant information better than unpleasant.  

Edwards later attempted to apply Sherif’s concept of “frame of reference” to the phenomenon of selective recall.  

He argued that what was responsible for the superiority of recall of pleasant material was not its pleasantness, per se, but rather its consistency with a person’s frame of reference. It was more psychologically economical to remember material which reinforced an already established view of the world. Edwards interpreted the findings of Watson and Hartmann that theists tend to remember theistic material better than atheists as demonstrating the superiority of recall for materials consistent with one’s frame of reference.

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In addition, he selected college students who were strongly for, neutral, or strongly opposed to the New Deal and asked them to listen to a ten minute political speech about the New Deal which contained both pro and con arguments. Analysis of a recall test administered both immediately after the speech and three weeks later showed that persons remembered the information which supported their own position on the New Deal best. In a later study, which varied only in the type of recall test used, Edwards demonstrated that persons showed more distortion of those aspects of a message which ran counter to their own views.

Most of the relevant research conducted during the 1940's and 1950's supported the selective recall hypothesis, including studies by Clark, Levine and Murphy, Wallen, Shaw, Shaw and Spooner, Taft, Jones and Aneshansel, and Jones and Kohler. While the last two studies did

support the previous findings, they modified them in a manner that requires additional consideration.

Jones and Aneshansel theorized that the tendency for persons to recall attitude-consistent material best is contingent upon other situational variables. Specifically, they hypothesized that when placed in a situation in which recall of belief-discrepant material was functional for other goals, people would remember the discrepant material better than supportive material. They told subjects in an experimental group that they would be asked to present arguments against their own position on the issue of segregation versus integration later. These subjects subsequently learned a set of both pro and con arguments. Another group of subjects was


assigned to a control condition, in which no request to present arguments against their own position at a later date was made. The authors discovered that persons in the control group did tend to remember those arguments which were supportive of their own position better, whereas persons in the experimental group remembered the opposition arguments better than belief-consistent arguments. This finding emphasized the significance of task orientation in the selective recall phenomenon.

Additional support indicating that recall is dependent on task orientation was offered by Zimmerman and Bauer. 35 The authors told subjects to be prepared to create at some future date arguments for or against the raising of teachers' salaries to either one of two groups, one being an audience composed of teachers and the other primarily taxpayers. Then they were asked to listen to some typical arguments on the issue, both pro and con. Later subjects recalled these arguments. The results showed that persons asked to compose messages for the teacher audience remembered more pro than con arguments for raising salaries; conversely, those asked to compose arguments for the taxpayer group remembered more con than pro arguments.

Jones and Kohler added the intervening variable of plausibility. They hypothesized and demonstrated that persons would recall plausible supportive arguments and implausible opposition arguments better than implausible supportive arguments and plausible opposition arguments. Once again, the authors used statements of argument about the segregation-integration issue in their investigation. Thus, the research of the 1950s modified the previous frame of reference perspective to include a functional approach to selective recall.

In consideration of the evidence presented to this point, selective recall as a psychological phenomenon would appear to be well established. Recent investigations, however, have failed to reconfirm the earlier ones. These more current studies have criticized past research on the grounds that it failed to control for differences in prior familiarity with the recalled material.

Waly and Cook were interested in the findings of


Jones and Kohler because the earlier study had suggested that the selective recall phenomenon was strong enough to be considered a potential indirect measure of attitude. Jones and Kohler had found a tendency for persons to recall attitude-consonant arguments better than attitude-dissonant ones only when the arguments were plausible, but the opposite when they were implausible. In an effort to develop an indirect measure of attitude, Waly and Cook repeated the Jones and Kohler study. Using the same issue of segregation-integration and the same attitude arguments used in the earlier study, they were unable to find the previously demonstrated selective recall or plausibility effect. Waly and Cook then replicated the experiment modifying the attitude statements so that all statements were comparable in difficulty and length. Again, they found no selective recall trend. Finally, they replicated the experiment for a third time, this time measuring the subjects' prior familiarity with arguments and also trying to determine if the subjects' detection of the study's purpose might have affected the results. Once more, the results were non-significant, and the controls indicated that prior

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38 Waly and Cook, "Attitude as a Determinant of Learning and Memory: A Failure to Confirm," pp. 280-88.

familiarity or detection of the study's purpose did not account for the negative results. The authors concluded by suggesting that the selective recall phenomenon was limited by conditions unspecifiable at that point.

Greenwald and Sakumura followed up the work of Waly and Cook. Using the issue of United States involvement in Vietnam, they attempted to test whether selective recall of arguments could be attributed to prior familiarity with the arguments. In three separate experiments, they asked subjects to rate their familiarity and agreement with single statement arguments on the issue. The subjects were then asked to recall the statements after a short period of time. The authors found no relationship between attitude and type of material recalled. Furthermore, no relationship was found between familiarity and recall in any of the three replications. The authors did observe that arguments against U.S. involvement in Vietnam, a relatively novel position at that time, exhibited superior recall scores in comparison to arguments for U.S. involvement. This was interpreted as an apparent superiority of recall for novel arguments.

40Greenwald and Sakumura, "Attitude and Selective Learning: Where are the Phenomena of Yesteryear?" pp. 387-97.
In sum, we are left with a confusing picture as to whether or not and under what circumstances selective recall operates. Most of the early studies suggested that attitude operated to enhance recall of attitude-consonant material and to suppress recall of attitude-dissonant material. Unfortunately, most of these early studies did not control for prior familiarity. It is possible that people in favor of the New Deal had higher recall scores for pro New Deal material than those opposed to the New Deal largely because the New Deal advocates were also more familiar with the pro New Deal material. During the 1950's, several studies tried to elaborate on the selective recall hypothesis by identifying variables that might mediate selective recall such as plausibility. Once again, however, these studies did not control for prior familiarity. More recent studies have attempted to control for familiarity, and even without controlling for it in the analyses, no tendency to selectively recall arguments has been demonstrated.

One aspect which may account for the difference in results is the complexity of the stimulus. In most of the earlier studies, the stimulus was an entire message, whereas the studies by Waly and Cook and Greenwald and Sakumura asked subjects to recall single statements of arguments without any connecting context. The latter
technique might not have provided optimal conditions for the appearance of selective recall. This explanation, however, cannot account for the difference between the negative results of Waly and Cook and the positive findings of Jones and Kohler since both studies used exactly the same stimuli.

**Overall Recall of Controversial Material**

In the studies which have been reviewed, two major methods for measuring amount of recall were used. The most popular method has been to divide the message into idea units and assign a unit score for each idea unit accurately recalled. Usually, two or more judges, unaware of the subjects' attitudes, were used to evaluate number of ideas accurately recalled, and a reliability measure for scoring recall was calculated. Generally, the reliability figure was above .80. A modification of this method, which was used in those studies that required the recall of single statement arguments, was to have judges rate the quality of recall of each statement and calculate inter-judge correlations on these measures.

A less popular method has been the use of a multiple item test using either true-false or multiple-choice questions to determine what aspects of the message the

person recalled. Of all the studies reviewed, only the Edwards study used this technique. 42

Another means of measuring recall would be to remove key words from a message and then ask subjects to fill in those blanks. A modification of this method is a technique developed by Taylor referred to as cloze procedure. 43 Taylor's technique involved the removal of every nth word from a message and asking subjects to fill in the blanks. This method, however, was developed not as a measure of recall, but as a measure of language readability. Cloze procedure did not remove key words, but rather removed words randomly so that whenever it was used, it was in some ways a measure of familiarity with the passage and in some ways a measure of general verbal ability. Thus, differences in cloze scores may not only be due to recall of a passage, but also due to a person's understanding of the language in which the passage is written. In addition, more items will probably be required to attain a particular level of reliability.


when using randomly selected words than when using key words. Taylor found that about fifty randomly selected words were required for a relatively stable measure. 44

Displacement of Message Position

The social-judgment approach to attitudes is grounded in the individual's perceptions of message stimuli. Sherif has theorized and observed that attitudes held by the person influence his perception of the degree to which a message either supports or opposes his own attitude. 45 This is true to the extent that the attitudes are ego-involved ones.

Sherif discussed two general categories of message displacement, or selective perception. The first was the tendency to see a message as being closer to one's own position than it was—assimilation. The second was the tendency to see a message as representing an attitude position further away from one's own position than it was—contrast. From these statements, it might appear that the real position of a message on a continuum can be established, but this is not the case. Assimilation—

44 Taylor, "Recent Developments in the Use of 'Cloze Procedure'," p. 48.
contrast effects are relative, and the extent of their existence can only be observed by comparing perceptions of message position for different groups, such as highly ego-involved versus non-involved persons, or by comparing the judgment of message position under different situational conditions, such as a message introduced as being from a highly credible source versus its introduction as emanating from a source of less credibility.

Sherif's review of the literature suggested that several variables were influential in producing assimilation-contrast effects. These included: source credibility, degree to which message position was ambiguously stated, and the listener's ego-involvement. Higher source credibility tended to produce greater assimilation. Messages which were ambiguously stated produced either assimilation or contrast, while unambiguous statements inhibited the message displacement phenomenon. Finally, ego-involvement produced greater contrast of a message's position, as long as the message was perceived as being outside of the individual's latitudes of acceptance and noncommitment; when the message was not perceived as being in the latitude of rejection, involvement enhanced assimilation.

46 Ibid., pp. 141-49.
Message placement was measured in the Sherif studies by asking the subject to judge the speaker's position by making a mark across a horizontal line representing the attitude continuum; each end of the line was labelled with the extreme polar position. Another possible alternative for judging message position would be to ask the subject to mark those positions on an ordered alternatives scale which he thinks the speaker would find acceptable.

**Dogmatism**

One of the criticisms of Sherif's early attempts to relate ego-involvement to other psychological phenomena was that the effects attributed to ego-involvement could have been due to other characteristics of the subjects. This criticism has been particularly damaging since the groups Sherif compared differed in ways other than their level of involvement. One other variable that may have caused the observed phenomena is dogmatism. This variable will be controlled in this study.

Rokeach developed a conceptualization of personalities, based on authoritarianism, which emphasized the distinction between the high and low dogmatic person.\(^\text{47}\) The difference between persons who are high and low in

dogmatism was based on differences in their belief and disbelief systems. Rokeach theorized that in comparison to more open-minded persons, the closed-minded person showed greater differentiation between belief and disbelief systems, but very little differentiation within the disbelief system. The dogmatic person also demonstrated greater rejection of disbelief systems.

As a measure of dogmatism, Rokeach developed a forty-item scale, the D-scale, which takes about twenty minutes to complete. For situations in which time requirements were more restrictive, two shorter forms were developed. Schulze created a test consisting of the ten best items from the original forty. The Schulze scale correlated .73 with the longer test. There was a problem with the shortened scale in that it was not unidimensional, but this was a characteristic which it shared with the D-scale.

Another shortened form of the D-scale has been developed by Troldahl and Powell; this scale used from ten to twenty of the best items of the D-scale to measure

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dogmatism. The number of items used was dependent on the level of reliability desired. Reliability varied from .66 for ten items to .79 for twenty items. This shortened form was developed to use in field studies rather than with college students.

Chapter II has elaborated the theoretical background and the measures for each of the major variables in this study. The independent variable of ego-involvement was treated first; a new value-functional measure of ego-involvement was proposed. The dependent variables, selective recall, overall recall, and message displacement were discussed next. Finally, the control variable of dogmatism was reviewed.

CHAPTER III
RELATIONSHIPS AMONG MAJOR VARIABLES

This chapter will treat the relationships among the major variables discussed in Chapter II. Of most interest to the purpose of this study is the relationship between ego-involvement and the criteria of selective recall, overall recall, and message displacement. Those relationships will be treated first, followed by a discussion of the relationship between ego-involvement and dogmatism, and finally the relationship of dogmatism to the dependent variables.

**Ego-Involvement and Selective Recall**

Sherif suggested that ego-involvement with an issue or object should increase the degree to which a person's perceptions and judgments are selective and consistent. On a theoretical level one would expect ego-involved persons to exhibit more selective recall than non-involved persons. This follows from the idea that the ego-involved person's own position serves as a stronger anchor against which to compare external stimuli. Such a stable frame of

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reference should influence the attitudinal nature of that which is recalled. On the other hand, the non-involved person does not have as stable a frame of reference and so should react less selectively toward controversial material.

In a review of research about ego-involvement, Iverson and Reuder concluded: "In general, evidence concerning effects of ego-involving materials on retention has yielded no well established principle. This failure seems in large part due to the difficulty in designing experiments which take account of S's familiarity and attitudes toward particular learning materials prior to experimentation." The authors' concept of ego-involvement was limited to situations in which the person's self-identity was threatened, but many of the studies to which they refer are ones discussed in Chapter 11.

While Iverson and Reuder were unwilling to hypothesize a general relationship between ego-involvement and selective recall, and while no study to date has systematically investigated the relationship of ego-involvement to the selective recall of complex messages, I feel that such a relationship may be deduced.

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2Iverson and Reuder, "Ego Involvement as an Experimental Variable," p. 158.
The older studies of selective recall, most of which confirmed the selective recall hypothesis, selected subjects in such a way that they were probably ego-involved with the issue on which material was recalled. Watson and Hartmann asked confirmed atheists and seminary students to recall religious material. Edwards selected subjects who were strongly for or strongly against the New Deal to recall information from a message about the New Deal. Research by Sherif has indicated that persons with extreme attitudes tend to be higher in ego-involvement, and so Edwards’ subjects might well have been highly involved. Levine and Murphy asked confirmed Communists and anti-Communists to recall material which was pro or anti-communist in nature. Wallen, Shaw, and Shaw and Spooner found that persons only selectively recalled personality descriptions when those descriptions referred to themselves but not to

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5The relation between attitude extremity and ego-involvement is explored by Sherif, Sherif and Nebergall, Attitude and Attitude Change, pp. 18-59.

6Levine and Murphy, "The Learning and Forgetting of Controversial Material," pp. 507-17.
others. Thus, the early studies may have knowingly or unknowingly selected subjects who were highly involved with the issue of recall, thus allowing for the alternative explanation that selective recall may be contingent upon the presence of ego-involvement in the issue. This speculation, however, cannot eliminate the possibility that prior familiarity might have been responsible for the observed effects.

Ego-Involvement and Overall Recall

The theoretical perspective offered by the social-judgment approach would also suggest that ego-involvement has an effect on the amount of message recall. One would expect a person who is ego-involved in an issue to have a stable frame of reference regarding the issue of involvement, into which it would be easier to place information than it would be for the non-involved person. This increased sensitivity to information about the issue of involvement might be counteracted by a general disorganizing force if the message is too threatening. Kamano and Drew's review indicated that both types of

behaviors had been observed. Thus, it would appear that whether ego-involvement functions to increase or decrease overall recall depends on the level of anxiety or threat aroused by the message; ego-involvement should be positively related to amount of recall up to some breaking point at which its effect should become disorganizing.

Ego-Involvement and Message Displacement

In his study of the placement of message position for political communications, Sherif found that for messages designed to be slightly partisan, heightened levels of ego-involvement (as determined by a person's latitude of rejection) tended to produce greater contrast and less assimilation of a belief-discrepant message. He also asked subjects to judge the position of a taped "fence-straddling" communication. This message alternately described the positions which the Democrats and the Republicans took on the issues of the 1960 presidential campaign without making any conclusions as to which was the best of the positions. Both highly ego-involved and


9Sherif, Sherif and Nebergall, Attitude and Attitude Change, pp. 155-61.

10Ibid., pp. 161-63.
less involved subjects exhibited an assimilation of the message, but the effect was more pronounced for the non-involved subjects. Thus, greater ego-involvement appears to produce less assimilation of a two-sided "fence-straddling" communication.

Ego-Involvement and Dogmatism
Since traditional measures of ego-involvement, including the size of a person's latitude of rejection and the number of categories used to group attitude statements, were validated on groups which varied in ways other than their degree of ego-involvement, it would be possible to attribute the differences Sherif discovered in psychological behavior to other variables, such as dogmatism. In much the same manner, should a relationship between ego-involvement and selective recall or overall recall be observed, it might be possible to attribute the effects to dogmatism. Therefore, it seems wise to allow for the relationship of ego-involvement to dogmatism. Recent studies have noted that a person's latitude of rejection as well as the number of categories he uses to group attitude statements tend to be stable over several issues, thus indicating that the traditional measures of ego-involvement might be related to personality
variables. Powell correlated latitude of rejection with dogmatism. Using three different issues he found that latitude of rejection was positively and significantly associated with dogmatism, the correlations ranging from .26 to .42. Similarly, dogmatism was positively and significantly related to extremity of position, the correlations varying from .38 to .57. Thus, dogmatism and ego-involvement are sufficiently related to consider dogmatism as a possible alternative explanation for some of the alleged effects of ego-involvement.

**Dogmatism and the Dependent Criteria**

No empirical data exist regarding the relationship between dogmatism and selective recall, but it would seem reasonable to predict greater selective recall of controversial material for the dogmatic person since in comparison to the open-minded individual, his belief and disbelief systems are more highly differentiated from each other, thus enhancing the chance

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that he will reject that with which he disagrees. The relationship between dogmatism and overall recall of a controversial message is less predictable from the theory. It seems likely that the relationship would be contingent on other variables such as credibility of the message's source.

Finally, the social-judgment approach would probably predict greater message displacement (contrast), since the dogmatic person differentiates more between belief and disbelief systems.

Chapter III has treated the theoretical relationships among the major variables. The literature suggests that ego-involvement is directly related to selective recall, overall recall, and greater contrast. Ego-involvement appears to be positively related to the control variable of dogmatism. Dogmatism probably is positively associated with selective recall and greater contrast, but its relation to overall recall is theoretically unpredictable.
CHAPTER IV

METHODOLOGY

This chapter will detail the experimental hypotheses of this study and the methods used to test them. It begins with a statement of those hypotheses which are based on the prior research reviewed in Chapters II and III. This is followed by a discussion of the measures, experimental stimuli, subjects, procedures, and statistics used in carrying out the study. The specific designs used to test the hypotheses are described with the results in Chapter V.

Hypotheses

1. Increase in ego-involvement due to saliency

Ego-involvement as measured by both the value-functional method and the ordered alternatives method will be greater in a situation where persons actually hear a two-sided message relevant to the object of their involvement than where no such relevant stimulus is presented.
2. **Effect of ego-involvement on message placement**

Persons who are ego-involved will be more likely to contrast or less likely to assimilate an ambiguous two-sided message than will persons who are not ego-involved.

3. **Selective recall**

When a person is presented with materials which are both supportive of and dissonant to his attitudinal position, he will tend to recall attitude-consonant information better than attitude-dissonant information.

4. **Effect of involvement on overall recall**

Persons who are ego-involved with the object of an attitude will recall more material from a two-sided message which is relevant to the object of their involvement than will persons who are not ego-involved with the topic of the message.

5. **Effect of involvement on selective recall**

Persons who are ego-involved with the object of an attitude will be more likely to exhibit selective recall as described in Hypothesis 3 than will persons who are non-involved.
6. **Comparison of predictive ability of involvement measures**

The relationships of ego-involvement with overall recall, selective recall, and message displacement will be greater for the value-functional measure than for the ordered alternatives measure.

7. **Situational effect of measured involvement**

The relationships between ego-involvement and the dependent variables (as predicted in Hypotheses 2, 4, and 5) will be greater when ego-involvement is measured during the situation in which the message is heard than at some prior time.

**Measures**

**Ego-Involvement**

Two different measures of ego-involvement were used in the study. The first measure was the proposed value-functional measure of involvement. The second was the ordered alternatives technique making use of the size of a person's latitude of rejection as an index of his level of involvement.

These two measures required the development of scales which also measured attitude direction and extremity. A measure of the subject's attitude was necessary to determine what kinds of materials were supportive
of or inconsistent with subject's own position. Therefore, this sub-section will discuss the development of both the attitude measure and the ego-involvement measure simultaneously since scores on both variables were obtained from the same scale.

The value-functional measure of ego-involvement and attitude requires that we know: (1) the degree to which a person finds a series of value statements or goals desirable, and (2) the degree to which a certain social policy is seen as being instrumental in leading to or blocking these same goals. Each value rating is multiplied by its corresponding instrumentality rating, and a person's attitude score is obtained by summing the signed products over all the value statements. The ego-involvement score is derived by summing the absolute value of each of the products over all the value statements. In mathematical notation, this may be stated as:

\[ E = \sum_{i=1}^{I} |V_i R_i|, \quad \text{and} \quad A = \sum_{i=1}^{I} V_i R_i, \]  

where

- \( E \) = a person's ego-involvement score,
- \( A \) = a person's attitude score,
- \( I \) = the total number of value statements rated for desirability and instrumentality,
- \( V_i \) = the desirability rating of the \( i^{th} \) value statement,
- \( R_i \) = the instrumentality rating of the \( i^{th} \) value statement.
Rosenberg used thirty-five different statements of value which he had derived from White's value analysis technique and Murray's analysis of major needs. These value statements were used to measure attitude on the issue of whether members of the Communist Party should be allowed to address the public.

I have modified the original Rosenberg value statements by selecting those which seemed subjectively most relevant to the issue used in this study and adding several statements which had not been included in the Rosenberg collection, but which appeared relevant to the stimulus issue (whether the sale and use of marihuana should be legalized). Thirty-two statements were presented to a group of sixty-one students in undergraduate communication classes at The Ohio State University, and they were asked to provide desirability and instrumentality ratings for each of them. An item analysis was performed and the sixteen value statements most related to the overall attitude score derived from the measure were retained. The Kuder-Richardson Reliability Coefficient No. 8 for the sixteen-item scale yielded


a value of .92. The rating scale for desirability of each of the values ranged in one unit steps from minus three, which represented "Gives me maximum dissatisfaction," to plus three, which represented "Gives me maximum satisfaction." A rating of zero indicated that the value gave the person neither satisfaction nor dissatisfaction. The instrumentality ratings for each of the value statements ranged in one unit steps from minus three, which indicated that the social policy of legalizing marihuana "Would completely block the goal," to a plus three rating, indicating that the social policy "Would completely attain the goal." A rating of zero indicated that the policy was irrelevant to the goal. The scales used to obtain these ratings appear in Appendix I and Appendix II, where all the forms administered to the subjects during Session 1 and Session 2, respectively, also appear.

Development of the ordered alternatives method of measuring ego-involvement required a set of orderable attitude statements covering the positions from very strongly for to very strongly opposed to legalizing marihuana. Sherif has generally used nine statements to represent a continuum of attitude positions.

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After a review of the positions taken on the issue of legalizing marihuana, as represented in current magazines, newspaper articles, and editorials, the author developed nineteen statements of attitude on the issue; these were submitted to the same sixty-one persons who had assisted in the development of the value-functional scale. They were asked to pick from the nineteen statements the five most strongly in favor of legalizing marihuana and the five most strongly opposed to legalizing marihuana. Nine statements were selected which appeared to cover the attitude continuum and seemed to be orderable. These were then submitted in a random order to a group of twenty-six graduate students who were asked to order them according to support for the policy of legalizing marihuana. The results indicated that the statements were orderable with a value of the coefficient of concordance being .89.\(^4\). The final scale appears in both Appendices I and II, where it is entitled "Attitudes about Legalizing Marihuana."

Completion of the ordered alternatives scale required subjects to indicate the statement with which they most agreed plus any other statements with which they also agreed. The total number of the nine statements

accepted constituted the subject's latitude of acceptance. Likewise, each subject indicated those positions with which he disagreed, and the total number of positions rejected was his latitude of rejection. The latitude of rejection was selected as the index of ego-involvement since Sherif noted that among the three different latitudes, it was the one most strongly related to ego-involvement. Finally, the total number of statements not marked constituted the latitude of non-commitment.

In order to calculate the attitude score using the ordered alternatives scale, it was assumed that the nine statements could be considered interval in nature. The most favorable statement toward legalizing marihuana was assigned a value of 9 and the most unfavorable statement a value of 1 with each of the intermediary statements separated from the next by a unit value. The average value of the attitude statements accepted was computed as a measure of attitude.

Overall Recall and Selective Recall

To test overall recall of the message as well as recall of each of the different types of attitudinal material, passages were selected from the message and key words were removed and replaced with a ten space blank which the subjects were asked to fill in with the
word the speaker used. There were twelve blanks from each of the three types of material, favorable, neutral, and unfavorable toward legalizing marihuana. Thus, the overall recall score could range from 0 to 36, and each of the scores for the pro-legalization, neutral, and anti-legalization materials could range from 0 to 12. The form used to test recall, Form F, appears in Appendix II.

Answers were scored on a right-wrong basis with each correct response counting one point. An answer had to be the same word as that used by the speaker to be considered correct; no synonyms were accepted. In some cases, it appeared that the subject had used the right word, but had misspelled it. In those cases, the response was considered correct. The passages were all scored by the experimenter, who was unaware of the subjects' attitudes.

Dogmatism

Dogmatism was measured by the shortened ten-item form of the Rokeach D-scale developed by Schulze. It appears in Appendix I under the title of "Personal Beliefs and Ideas."

General Knowledge about Issue

Since previous reviews have suggested that selective

recall might be accounted for on the basis of prior familiarity, I attempted to get a measure of the subject's general knowledge about the stimulus issue.

The measure used was a short passage developed by the experimenter from which key words were deleted. (See Appendix II, Form E.) Subjects were asked to fill in fourteen different blanks. The passage dealt with the history of the issue as well as its current study by the National Commission on Marihuana and Drug Abuse. It did not overlap with the material presented in the message, but it used the same types of information as that presented in the neutral part of the message. One point was assigned for each right answer, but this time synonyms were accepted for the pre-determined correct answer. As before, the subject's attitude was unknown when scoring the passage.

Placement of Message

Subjects responded to the ordered alternatives scale, discussed in the measurement of ego-involvement and attitude above, according to how they thought the speaker would respond to it. (See Appendix II, Form A.) The scale values of all positions marked as acceptable

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to the speaker (scored on the one to nine scale) were averaged to compute placement of the speaker's position.

**Stimulus Message**

The issue of whether or not the sale and use of marihuana should be legalized was used as the stimulus issue because subjects exhibited a broad range of ego-involvement on this issue. In a pilot study conducted for the purpose of selecting an issue, results showed that of six different issues tested with a group comparable to the sample used in the main study, the issue of legalizing marihuana had the greatest variance for latitude of rejection scores. This variance was essential since the study attempted to validate a new measure of ego-involvement.

The message was a two-sided one which contained arguments for and against legalizing marihuana as well as material which was deemed neutral. These neutral arguments discussed the previous use of marihuana and supplied figures concerning its present use. Approximately the first third of the speech was devoted to neutral material, and the remainder of the speech alternately treated arguments which opposed or supported the legalization of marihuana. It was written in a style that presented arguments rather than indentifying with them. The message appears in Appendix III.
Since it was possible that the use of a taped speech might not produce sufficient impact to allow the predicted phenomena to be observed, a control for message impact was exercised. The message was delivered in two different ways. About half of the subjects heard a message which had been tape-recorded by a graduate student in Speech Communication at The Ohio State University; the message took about ten minutes to deliver. The other half of the subjects listened to the same speaker deliver the speech in person.

Subjects

The sample used for this study was a group of students enrolled in the group discussion course, Speech 110, at The Ohio State University during the Spring of 1972. The study was conducted in two sessions, and only those data for students participating in both sessions were used for the main analyses reported in Chapter V.

The first questionnaire was completed by 166 students of whom only 116 participated in the second session. Of these, 15 failed to complete the recall test during the second session, thus leaving only 101 sets of data on which a complete analysis could be performed. Of these, 13 served as a control group which did not hear the message, but only filled out the scales, thus leaving
88 subjects on whose responses the results in Chapter V were based.

Subjects were asked to provide information regarding their age, class, sex, and major. A summary of these data showed that the persons sampled were largely female freshmen and sophomore students, most of whom were 18 to 20 years old. In addition, they were primarily a vocationally oriented group with the great majority of them majoring in pre-nursing, administrative science, allied medical professions, and home economics, although there were approximately 20 to 25% of the students who were majoring in fields included in the Arts and Sciences such as History, Speech, Sociology, Psychology, and Biology. On the basis of these data, it would be expected that the sample would be more opposed to legalizing marihuana than would a random sample of University students.

**Procedure**

The data for this study were collected in two sessions. The procedures for each are described below.

**Session 1**

Session 1 was conducted in a large lecture group situation. The experimenter presented a five page questionnaire to the students, who were told that they
were being asked to engage in a communication research project being conducted by the experimenter. The questionnaire included in the following order: (1) a cover sheet explaining the purpose of the questionnaire and instructions for completing it, (2) the ten-item measure of dogmatism, (3) the sixteen-item value scale, (4) the sixteen-item instrumentality scale, and (5) the ordered alternatives scale. In addition, subjects were asked to provide information on personal characteristics such as age, sex, and major on the cover sheet.

Session 2

Experimental Groups

A small group of thirteen subjects was assigned to a control condition to allow comparison of the recall of the messages presented with some base. The procedure used for the experimental groups will be discussed prior to discussing those used for the control group. Both the control and experimental groups were treated the same in Session 1.

At a time ten to thirteen days after Session 1, the experimenter entered the recitation classes of the group discussion course with the permission of the instructors. Each of these classes was composed of from fifteen to thirty students. The experimenter asked the students to listen to a speech on the issue of legalizing
marihuana which had been made by a fellow student in a public address course at the University, after which they would be asked to make some evaluations about the speech. They were not made aware beforehand that they would be asked to recall information.

There were two different ways of delivering the speech, the taped condition and the live condition. In the taped condition, the subjects heard the ten minute tape-recording of the speaker, and in the live condition, they heard the speaker deliver the speech in person. In both conditions, the speaker was introduced in the same way, noting that he had been chosen because of the excellence of the speech and because of its particular representation of an "analytic" type. In the live condition, the speaker left after he had finished. Of the eighty-eight persons participating in both sessions fifty heard the taped speech, and thirty-eight heard the live speaker.

Afterwards, the subjects were asked to complete three sets of forms. (See Appendix II.) The first set (Form A) consisted of two pages with an introductory page explaining Form A. Subjects were asked to indicate how they thought the speaker would react to the same set of ordered alternatives they had completed in Session 1.
The second set of forms (Forms B, C, and D) were the value-functional scales for measuring attitude and involvement and the Sherif ordered alternatives scale for measuring attitude and involvement. These were the same scales used in Session 1. The two forms in the third set, Forms E and F, were the measure of general knowledge about the issue and the measure of recall of the speech, respectively.

**Control**

A small group of persons were assigned randomly to a condition which did not hear the message during the second session, but filled out Forms B, C, D, and F as described above. In filling out Form F, they were asked to guess as best they could what the blanks should be. This group was used to check the effectiveness of the live and taped conditions for enhancing recall scores.

**Statistics**

Analysis of variance was used to test each of the hypotheses.\(^7\) The specific designs used are elaborated in Chapter V where the results are reported. If significant overall F ratios were observed, F ratios for individual

comparisons were calculated. The .05 level of significance was used in all tests.

This chapter has stated the proposed hypotheses and described the measures, stimulus message, procedures, and statistics with which they were tested. The next chapter will present the analyses and results based on these methods.

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8bid., p. 378.
CHAPTER V

RESULTS

In the pages and tables of this chapter, A represents attitude of the subject, I refers to ego-involvement, M, the nature of the material recalled (either pro, neutral, or con), C, the condition of speech delivery (either taped or live), and T, the time of measuring ego-involvement (pre- or post-speech). Each of the hypotheses, beginning with Hypothesis 1, will be examined in light of the results.

Hypothesis 1 predicted greater ego-involvement when measured after a two-sided speech as opposed to measuring it prior to the speech. Two least-squares, unequal cell, two-way analyses of variance using three levels of speech delivery condition (tape, live, and none) and two points of time for measuring ego-involvement (pre- and post-speech) were run for all subjects who participated in both the pre- and the post-sessions (N=101). Latitude of rejection served as the dependent measure for the first analysis and the value-functional measure of involvement for the second. The summaries of these
analyses are presented in Table 1. If a difference in measured involvement occurred, it should have been reflected in a significant F ratio for the main effect of time (T). The F ratio for the effect of T using

**TABLE 1**

ANALYSES OF VARIANCE FOR DEGREE OF MEASURED INVOLVEMENT

<table>
<thead>
<tr>
<th>Source</th>
<th>Sums of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Squares</th>
<th>F Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Latitude of Rejection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>5.02</td>
<td>2</td>
<td>2.51</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>Subj. w. Groups</td>
<td>577.60</td>
<td>98</td>
<td>5.89</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>6.41</td>
<td>1</td>
<td>6.41</td>
<td>3.30</td>
<td>&lt;.10</td>
</tr>
<tr>
<td>CT</td>
<td>6.59</td>
<td>2</td>
<td>3.30</td>
<td>1.70</td>
<td>&lt;.25</td>
</tr>
<tr>
<td>T x Subj. w. Groups</td>
<td>190.00</td>
<td>98</td>
<td>1.94</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Value-Functional Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>170.16</td>
<td>2</td>
<td>85.08</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>Subj. w. Groups</td>
<td>146,920.42</td>
<td>98</td>
<td>1499.19</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Within Subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>24.95</td>
<td>1</td>
<td>24.95</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>CT</td>
<td>452.01</td>
<td>2</td>
<td>226.01</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>T x Subj. w. Groups</td>
<td>24,540.54</td>
<td>98</td>
<td>250.41</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>
the value-functional measure of involvement was less than one, thus indicating no effect of situation on measured involvement. The F ratio for the main effect of time on the latitude of rejection was non-significant (0.05<p<0.10), but it did approach significance. An examination of the direction of this trend, however, showed that it was in the opposite direction from the prediction.

Table 2 presents the mean values of the latitudes of rejection by time of measure and by condition of

TABLE 2

MEAN LATITUDE OF REJECTION
BY TIME OF MEASURE
AND CONDITION OF SPEECH DELIVERY

<table>
<thead>
<tr>
<th>Condition of Delivery</th>
<th>Time of Measure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-Speech</td>
<td>Post-Speech</td>
</tr>
<tr>
<td>Tape</td>
<td>4.00</td>
<td>3.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(50)</td>
<td>(50)</td>
<td></td>
</tr>
<tr>
<td>Live</td>
<td>3.97</td>
<td>3.18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(38)</td>
<td>(38)</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3.54</td>
<td>3.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(13)</td>
<td>(13)</td>
<td></td>
</tr>
</tbody>
</table>

*The value in parentheses below each mean indicates the number of persons whose scores were used to calculate that mean.
delivery. There was a trend for the post-speech measure of involvement to be less than the pre-speech measure. This trend appeared to increase as one went from the control group to the persons who heard the taped speech to those who heard the live speech. The latter effect probably accounted for the slight CT Interaction effect, which was also not statistically significant (p<.25). Thus, not only was Hypothesis 1 not confirmed, but there was a slight tendency for the opposite of the predicted effect to occur.

Hypothesis 2 predicted that persons who were ego-involved would tend to either contrast the speaker’s position more or assimilate it less than those who were non-involved. A least-squares, unequal cell, two-way analysis of variance design with three levels of attitude (unfavorable, neutral, and favorable) and three levels of involvement (low, middle, and high) was used to test Hypothesis 2. The design was repeated four times, using each of the four different measures of involvement to categorize subjects into low, middle, or high involvement. The summaries of these analyses appear in Table 3.

Persons were categorized into attitude groups by using a combination of the two pre-speech measures of attitude. This was accomplished by first breaking the
### TABLE 3

ANALYSES OF VARIANCE FOR MESSAGE PLACEMENT USING EACH OF THE FOUR DIFFERENT MEASURES OF INVOLVEMENT TO CATEGORIZE SUBJECTS

<table>
<thead>
<tr>
<th>Source</th>
<th>Sums of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Squares</th>
<th>F Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Speech Value-Functional Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>.32</td>
<td>2</td>
<td>.16</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>l</td>
<td>7.55</td>
<td>2</td>
<td>3.78</td>
<td>2.41</td>
<td>&lt;.10</td>
</tr>
<tr>
<td>AL</td>
<td>3.34</td>
<td>4</td>
<td>.84</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>Within Groups</td>
<td>123.79</td>
<td>79</td>
<td>1.57</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td><strong>Pre-Speech Sherif Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>.32</td>
<td>2</td>
<td>.16</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>l</td>
<td>.06</td>
<td>2</td>
<td>.03</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>AL</td>
<td>.60</td>
<td>4</td>
<td>.15</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>Within Groups</td>
<td>134.03</td>
<td>79</td>
<td>1.70</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td><strong>Post-Speech Value-Functional Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>.32</td>
<td>2</td>
<td>.16</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>l</td>
<td>1.27</td>
<td>2</td>
<td>.64</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>AL</td>
<td>4.09</td>
<td>4</td>
<td>1.02</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>Within Groups</td>
<td>129.33</td>
<td>79</td>
<td>1.64</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td><strong>Post-Speech Sherif Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>.32</td>
<td>2</td>
<td>.16</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>l</td>
<td>2.47</td>
<td>2</td>
<td>1.24</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>AL</td>
<td>6.15</td>
<td>4</td>
<td>1.54</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>Within Groups</td>
<td>126.07</td>
<td>79</td>
<td>1.60</td>
<td></td>
<td>--</td>
</tr>
</tbody>
</table>
distribution of attitudes obtained for each of the
two attitude measures into quintiles. Each person
was assigned a number between one and five for each
attitude measure that represented his relative rank in
the sample for favorability toward the legalization
of marihuana. The ranks for each measure were then
added and persons were assigned to either the Unfavor­
able, Neutral or Favorable attitude group on the basis
of their summed ranks on the two attitude measures.
This procedure of combining the two measures of atti­
tude was performed to produce a more stable categori­
zation of subjects according to attitude. For all
four analyses based on different measures for categor­
izing subjects into involvement groups, the attitude
dimension was categorized the same.

Subjects were divided into involvement groups for
each of the four involvement measures by assigning them
according to whether they fell into the highest third,
middle third, or bottom third of the scores for that
particular measure. Data for persons hearing the taped
and live message were combined in the design.

If the hypothesis advanced were valid, the F ratio
for Attitude x Involvement interaction (AI) should have
been significant. In none of the four analyses, however,
did the F ratio exceed one. Thus, Hypothesis 2 was not
confirmed.
Using the pre-speech value-functional measure of involvement to categorize subjects, there was an Involvement main effect (I) which approached significance (p<.10). The nature of this effect was that persons who were highly ego-involved tended to see the message as being more favorable toward legalizing marihuana than did those persons in the low and middle involvement groups.

The possibility that dogmatism might have accounted for the results of the study was considered. Analyses of covariance using the same design as the analyses of variance previously described and using the ten-item dogmatism scale score as a covariate were performed on the message placement data. ¹ The adjustments provided by the covariate did not significantly change the F values obtained in the analyses of variance.

In an attempt to check whether different ways of delivering the speech might have mediated the relationship between ego-involvement and message placement, a secondary analysis was performed. Ideally, the condition of speech delivery should have been included as another major variable in this study. Division of the eighty-eight subjects into eighteen instead of nine

¹Winer, Statistical Principles in Experimental Design, pp. 595-618.
cells, the number used in the analyses so far, would have reduced the number of subjects per cell to such a small number that the size of the experimental error would have dwarfed any differences between treatments. Therefore, a correlation analysis was carried out in which the correlation between attitude and message placement was calculated for each involvement group for each condition of message delivery. There were four different measures of attitude and four different measures of involvement for each person; thus the analysis included sixteen sets of attitude with message placement correlations by condition of speech delivery and level of involvement, all of which are presented in Table 4.

In interpreting these data, it should be remembered that a positive correlation between attitude and the placement of the speaker's position represents an assimilation effect while a negative correlation indicates a contrast effect.

An examination of the correlations between attitude and message placement for the analysis in which the subject's involvement category was determined by the pre-speech value-functional measure showed that for persons hearing the taped message, there was a heightened tendency to assimilate the message with
TABLE 4
CORRELATIONS OF ATTITUDE WITH PLACEMENT OF SPEAKER’S POSITION
BY INVOLVEMENT LEVEL AND CONDITION-OF-DELIVERY*

<table>
<thead>
<tr>
<th>Attitude Measure</th>
<th>Condition of Speech Delivery</th>
<th>Value-Functional Measure: Pre-Speech</th>
<th>Sherif Measure: Pre-Speech</th>
<th>Value-Functional Measure: Post-Speech</th>
<th>Sherif Measure: Post-Speech</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tape</td>
<td>0.19, 0.01, 0.55</td>
<td>-0.1, 0.12, 0.22</td>
<td>-0.43, 0.12, 0.43</td>
<td>0.04, 0.14, 0.29</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>0.59, 0.16, -0.25</td>
<td>-0.38, -0.23, 0.24</td>
<td>0.20, -0.32, -0.15</td>
<td>-0.24, -0.27, 0.23</td>
</tr>
<tr>
<td></td>
<td>Tape</td>
<td>-0.27, 0.14, 0.50</td>
<td>-0.08, -0.15, 0.35</td>
<td>-0.03, 0.05, 0.23</td>
<td>-0.05, -0.10, 0.45</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>0.11, -0.25, 0.09</td>
<td>0.26, 0.08, 0.06</td>
<td>0.20, 0.02, 0.19</td>
<td>0.20, -0.06, 0.19</td>
</tr>
<tr>
<td></td>
<td>Tape</td>
<td>-0.45, 0.15, 0.45</td>
<td>-0.11, -0.14, 0.39</td>
<td>-0.28, -0.16, -0.24</td>
<td>0.01, -0.30, 0.35</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>0.67, -0.04, -0.01</td>
<td>0.09, 0.02, 0.24</td>
<td>0.15, -0.28, -0.11</td>
<td>0.12, 0.01, 0.30</td>
</tr>
<tr>
<td></td>
<td>Tape</td>
<td>-0.19, 0.49, 0.54</td>
<td>0.38, 0.28, 0.39</td>
<td>0.08, 0.42, 0.26</td>
<td>0.35, 0.13, 0.29</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>0.27, 0.36, 0.10</td>
<td>0.06, 0.26, 0.26</td>
<td>0.22, -0.13, 0.21</td>
<td>0.13, -0.18, 0.11</td>
</tr>
</tbody>
</table>

*Low, middle, and high involvement are represented respectively by 1, 2, and 3. A1 through A4 symbolize the following attitude measures: Rosenberg Pre-Speech, Sherif Pre-Speech, Rosenberg Post-Speech, and Sherif Post-Speech. Values in parentheses show the number of cases used in the correlation above them.
increasing levels of involvement. Conversely, if the message was delivered by a live speaker, persons who were highly involved were more likely to contrast the speaker's position than were the less involved subjects. Thus, for attitude measure A₁ (the Rosenberg pre-speech measure of attitude) the correlation with message placement for those hearing the taped message was -.19 for persons low in involvement and increased to .55 for persons high in involvement. For those hearing the live message, the relation between attitude and message placement decreased from .59 for subjects low in involvement to -.25 for subjects high in involvement. This interactive effect based on the manner in which the speech was delivered may well have accounted for the failure to find a relationship between ego-involvement and message placement in the main analysis.

The analysis of the correlations based on the post-speech value-functional measure of ego-involvement showed a similar but weaker trend than the one observed for the pre-speech value-functional measure. An examination of the two analyses based on the Sherif (ordered alternatives) measure of ego-involvement did not provide as consistent a picture. While there still seemed to be a slight tendency for greater involvement to produce greater assimilation of a taped message, the opposite
relationship of greater contrast of a live speaker with greater levels of involvement did not appear consistently. It did occur when the pre-speech Sherif measure of attitude, $A_2$, was correlated with message placement. With all other attitude measures, however, there was either little apparent relationship between involvement and placement, or there was a slight positive association of involvement with assimilation of the live message, thus demonstrating no interactive effect of message delivery.

Hypotheses 3 through 7 were analyzed by the use of four least-squares, unequal cell, repeated measures, $3 \times 3 \times 3$ analyses of variance, each of the four analyses being based on a different measure for categorizing subjects into involvement groups. The three factors in each analysis were attitude of subject (A): unfavorable, neutral, or favorable; Involvement (I): low, middle, or high; and nature-of-material (M): pro-, neutral, or anti-legalization. Subjects were categorized according to attitude and ego-involvement in the same way as described for the testing of Hypothesis 2. The nature-of-material variable was repeated, scores for pro, con, and neutral recall being obtained for each person. The summaries of these analyses appear in Table 5, which should be consulted in the discussion of Hypotheses 3 through 7.
### TABLE 5
ANALYSES OF VARIANCE FOR MESSAGE RECALL
USING EACH OF THE FOUR DIFFERENT
MEASURES OF INVOLVEMENT
TO CATEGORIZE SUBJECTS

<table>
<thead>
<tr>
<th>Source</th>
<th>Sums of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Squares</th>
<th>F Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Speech Value-Functional Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Between Subjects</strong></td>
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</tr>
<tr>
<td>A</td>
<td>7.46</td>
<td>2</td>
<td>3.73</td>
<td>&lt;1</td>
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</tr>
<tr>
<td>I</td>
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<tr>
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</tr>
<tr>
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<td>2.19</td>
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<td>--</td>
</tr>
<tr>
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<td>3.12</td>
<td>1.41</td>
<td>&lt;.25</td>
</tr>
<tr>
<td>AIM</td>
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<td>4.52</td>
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<td>2.21</td>
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<tr>
<td><strong>Pre-Speech Sherif Measure</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Between Subjects</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>7.46</td>
<td>2</td>
<td>3.73</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
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<td>1.41</td>
<td>&lt;.25</td>
</tr>
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<td>AI</td>
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<td>79</td>
<td>6.11</td>
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<td><strong>Within Groups</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
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<td>540.20</td>
<td>2</td>
<td>270.10</td>
<td>113.44</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>AM</td>
<td>8.77</td>
<td>4</td>
<td>2.19</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>IM</td>
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<td>1.91</td>
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<td>--</td>
</tr>
<tr>
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<td>2.37</td>
<td>&lt;1</td>
<td>--</td>
</tr>
<tr>
<td>M x Subj. w. Groups</td>
<td>375.79</td>
<td>158</td>
<td>2.38</td>
<td>--</td>
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</tr>
</tbody>
</table>
Hypothesis 3 predicted that the behavior of recalling attitude-consistent material better than attitude-dissonant material would be observed as an overall
effect. This effect was tested by the Attitude x Nature-of-Material interaction (AM) in Table 5. The value for the F ratio for AM is less than one and is the same for all four analyses, since in all four both the attitude and the nature-of-material variable are categorized in the same manner. Thus, Hypothesis 3 was not confirmed.

Hypothesis 4 predicted greater overall recall for persons who were highly involved than for those who were less involved. The Involvement main effect (I) tested this hypothesis. Except for the analysis which is based on the pre-speech Sherif measure of involvement, the F ratio for involvement is less than one. For the analysis based on the pre-speech Sherif measure of involvement, the effect was far from being significant (p < .25), and the differences between involvement groups that occurred were not in the predicted direction. The less involved persons tended to have slightly higher overall recall scores.

One of the difficulties in testing Hypothesis 4 was that the data within the cells combined subjects who heard the taped message with subjects who heard the speaker in person. If the live message was more effective in enhancing recall, and if a particular involvement grouping, by chance, had a larger percentage of persons hearing the live message than the other involvement
groups, then either a spurious significant result might have occurred, or what was truly a statistically significant result might have been masked by the confounding effect of message impact. Therefore, a secondary analysis was run to see whether the condition-of-delivery variable affected message recall. This was done with a least-squares, unequal cell, 3 x 3 analysis of variance, using recall of material as the dependent measure. The two factors were condition-of-delivery: none, taped, and live; and nature-of-material: pro-, neutral, and anti-legalization. The total N, 160, for this analysis was somewhat larger since the data for all persons for whom recall data had been obtained in the second session of this study were used regardless of whether the person filled out any other form or participated in Session 1. The results of this analysis are presented in Table 6.

The analysis showed that the effect of condition-of-delivery (C) was statistically significant (p<.001). In addition, the nature-of-material variable (M) and the CM interaction were also statistically significant (p<.001). Individual comparisons between the means of the different delivery conditions using F ratios indicated that each group was significantly different from every other group at the .001 level. The mean for the live speech group was higher than that for the taped
speech group, which was correspondingly higher than that of the control group. Likewise, comparison of the individual nature-of-material means demonstrated significant differences between all pairs of means at the .001 level. It should be noted that this effect was also found in Table 5 where it was based on a smaller number of cases than those analyzed in Table 6. Recall of neutral-material was greater than recall of pro-material, which was correspondingly greater than con-material recall. The interaction effect derived from the fact that the difference between recall of pro- and con-material decreased from the control group to the taped speech group to the live speech group.
These results reinforce the possibility that the condition-of-delivery variable may have confounded involvement's effect on overall recall. Another secondary analysis was performed in which the correlation between involvement and overall recall was calculated for each measure of involvement and for each of the two conditions of delivery. The results of this analysis appear in Table 7.

**TABLE 7**

<table>
<thead>
<tr>
<th>Type of Delivery</th>
<th>Value-Functional Measure: Pre-Speech</th>
<th>Sheriff Measure: Pre-Speech</th>
<th>Value-Functional Measure: Post-Speech</th>
<th>Sheriff Measure: Post-Speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape</td>
<td>-.05</td>
<td>.08</td>
<td>-.10</td>
<td>.05</td>
</tr>
<tr>
<td>Live</td>
<td>-.21</td>
<td>-.50</td>
<td>-.20</td>
<td>-.12</td>
</tr>
</tbody>
</table>

Values in parentheses indicate the number of cases used to calculate the correlation above them.

The first fact that should be observed is that for all measures of involvement, there was a slight to moderate negative correlation of involvement with overall recall for persons hearing the live speech. The only statistically significant value for all of these
correlations was the one for the correlation of the pre-speech Sherif measure of involvement with overall recall \((t=-3.47; p<.01)\). The other fact that should be noted is that this small to moderate negative correlation was not observed for persons who heard the taped speech. It should be remembered that it was the Sherif pre-speech measure of involvement that showed a slight but statistically non-significant relationship between involvement and overall recall. Thus, the confounding effect of speech delivery condition in the main analysis did operate to mask the effect of involvement, but in the direction opposite to that predicted. The trend was for greater involvement to be associated with less overall recall of the two-sided message.

Hypothesis 5 predicted that greater ego-involvement would heighten the effect of selective recall so that ego-involved persons should be more inclined to recall attitude-consistent material over attitude-dissonant material than their less involved counterparts. The effect which tested this hypothesis was the Attitude x Involvement x Nature-of-Material interaction (AIM) in Table 5. Only in the analysis which used the pre-speech value-functional measure of ego-involvement was the AIM effect statistically significant \((p<.05)\). Deeper analysis of this effect indicated that it was
not supportive of Hypothesis 5. The simple effects of the AM interactions were calculated for each of the involvement levels. Only for the middle involvement group was the AM interaction simple effect found to be significant (F=3.66; p<.01), thus suggesting that the variance which produced the AIM interaction emanated from the middle involvement group. A graphic representation of the cell means best demonstrates the nature of that interaction. Figure 1 shows that for persons

![Graph showing recall for different attitudes](image)

Attitude of Subject: Unfavorable Neutral Favorable

**Fig. 1**--Mean recall of different types of material according to attitude of subject for middle involvement.

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2 Ibid., pp. 174-78.
in the middle involvement group those with favorable attitudes tended to remember either pro- or con-material better than those with unfavorable attitudes, while they did not recall neutral-material as well as persons with unfavorable attitudes. This finding is not supportive of Hypothesis 5.

Once again, a secondary analysis was performed, and an attempt was made to see if different trends in ego-involvement's effect on selective recall were produced by the different conditions of delivery. Correlations were calculated between attitude and recall of, first, pro-material (Table 8) and, then, con-material (Table 9) for varying levels of ego-involvement and for different conditions of delivery.

In examining these results it is important to remember that the purpose of this secondary analysis was not to look for statistically significant results, but rather to look for trends which appeared consistent and clear enough to explain the findings and also provide a better base for future predictions. If any of the trends observed in either Table 8 or 9 is to have any value for suggesting future directions of research, similar tendencies toward selective or dissonant recall under the same conditions of involvement and types of speech delivery should have been observed when attitude
### TABLE 8
CORRELATIONS OF ATTITUDE WITH RECALL OF PRO-MATERIAL
BY INVOLVEMENT LEVEL AND CONDITION-OF-DELIVERY

<table>
<thead>
<tr>
<th>Attitude Measure</th>
<th>Condition of Speech Delivery</th>
<th>Value-Functional Measure: Pre-Speech</th>
<th>Sherif Measure: Pre-Speech</th>
<th>Value-Functional Measure: Post-Speech</th>
<th>Sherif Measure: Post-Speech</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 12 13</td>
<td>11 12 13</td>
<td>11 12 13</td>
<td>11 12 13</td>
</tr>
<tr>
<td>A₁ Tape</td>
<td>.31 .29 .27</td>
<td>.18 .25 .21</td>
<td>.36 .27 .17</td>
<td>.04 .48 .15</td>
<td></td>
</tr>
<tr>
<td>Live</td>
<td>.07 .07 .19</td>
<td>.42 .44 .01</td>
<td>.31 .04 .02</td>
<td>.26 .07 .10</td>
<td></td>
</tr>
<tr>
<td>A₂ Tape</td>
<td>.27 .13 .29</td>
<td>.10 .12 .34</td>
<td>.64 .25 .31</td>
<td>.07 .54 .29</td>
<td></td>
</tr>
<tr>
<td>Live</td>
<td>.44 .03 .10</td>
<td>.36 .33 .35</td>
<td>.20 .09 .08</td>
<td>.41 .28 .20</td>
<td></td>
</tr>
<tr>
<td>A₃ Tape</td>
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<td>-.29 -.24 .16</td>
<td>-.05 .09 -.19</td>
<td>-.35 -.43 .15</td>
<td></td>
</tr>
<tr>
<td>Live</td>
<td>-.01 .00 -.33</td>
<td>-.08 -.40 -.02</td>
<td>.03 .21 -.32</td>
<td>-.38 -.16 .10</td>
<td></td>
</tr>
<tr>
<td>A₄ Tape</td>
<td>.29 .10 .11</td>
<td>-.24 .03 .39</td>
<td>.46 -.01 .19</td>
<td>.17 -.65 .46</td>
<td></td>
</tr>
<tr>
<td>Live</td>
<td>-.34 -.28 .04</td>
<td>.49 -.40 -.23</td>
<td>-.51 .16 -.04</td>
<td>-.36 .09 .10</td>
<td></td>
</tr>
</tbody>
</table>

*Low, middle, and high involvement are represented respectively by 1, 2, and 3. A₁ through A₄ symbolize the following attitude measures: Rosenberg Pre-Speech, Sherif Pre-Speech, Rosenberg Post-Speech, and Sherif Post-Speech. Values in parentheses show the number of cases used in the correlation above them.
TABLE 9
CORRELATIONS OF ATTITUDE WITH RECALL OF CON-MATERIAL
BY INVOLVEMENT LEVEL AND CONDITION-OF-DELIVERY

<table>
<thead>
<tr>
<th>Attitude Measure</th>
<th>Condition of Speech Delivery</th>
<th>Value-Functional Measure: Pre-Speech</th>
<th>Sherif Measure: Pre-Speech</th>
<th>Value-Functional Measure: Post-Speech</th>
<th>Sherif Measure: Post-Speech</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>11  12  13</td>
<td>11  12  13</td>
</tr>
<tr>
<td>A1</td>
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<td>-0.11 0.11 0.41</td>
<td>0.11 0.36 0.14</td>
<td>0.09 0.04 0.20</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>-0.31 0.54 -0.15</td>
<td>0.25 0.05 0.19</td>
<td>0.20 -0.06 -0.26</td>
<td>0.20 0.06 0.01</td>
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<tr>
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<td>Tape</td>
<td>-0.01 -0.13 0.23</td>
<td>-0.04 -0.05 0.47</td>
<td>0.25 0.17 -0.02</td>
<td>0.12 0.06 0.08</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>-0.31 0.37 0.05</td>
<td>-0.13 0.19 0.35</td>
<td>-0.02 0.09 0.11</td>
<td>-0.23 0.43 0.34</td>
</tr>
<tr>
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<td>Tape</td>
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<td>-0.21 0.07 0.49</td>
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<td>0.26 0.10 -0.21</td>
</tr>
<tr>
<td></td>
<td>Live</td>
<td>-0.39 0.02 -0.20</td>
<td>0.27 0.05 -0.23</td>
<td>0.09 0.27 -0.44</td>
<td>-0.13 0.26 -0.15</td>
</tr>
<tr>
<td>A4</td>
<td>Tape</td>
<td>-0.10 -0.23 0.24</td>
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<tr>
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<td>Live</td>
<td>-0.32 0.21 -0.07</td>
<td>0.07 0.11 -0.20</td>
<td>0.09 0.16 -0.13</td>
<td>-0.23 0.37 0.14</td>
</tr>
</tbody>
</table>

*Low, middle, and high involvement are represented respectively by 1, 2, and 3. A1 through A4 symbolize the following attitude measures: Rosenberg Pre-Speech, Sherif Pre-Speech, Rosenberg Post-Speech, and Sherif Post-Speech. Values in parentheses show the number of cases used in the correlation above them.
was correlated with con-material as when it was correlated with pro-material.

With respect to Table 8, a positive correlation between attitude and pro-recall represents selective recall, while a negative correlation indicates dissonant recall, or superior recall of opposite side material. Conversely, in Table 9 a positive correlation between attitude and con-recall shows dissonant recall, while a negative correlation reflects selective recall.

In perusing Tables 8 and 9 it becomes apparent that the observable trends were not as clear or consistent as they were in the relationship between attitude and message placement. Furthermore, the trends toward selective or dissonant recall for similar conditions of involvement and speech delivery were inconsistent in the two tables. For example, the two analyses in Table 8 based on the value-functional measure of involvement for the persons hearing the taped message showed a tendency for more involved subjects to be more inclined to recall dissonant information. The analyses based on the value-functional measures of involvement in Table 9 showed a slight tendency for the more involved persons to be less inclined to recall dissonant information from the taped message than their less involved counterparts. Thus, the trends offered in Tables 8 and 9 were
of insufficient consistency to suggest an interactive trend based on speech delivery. Since these trends were inconsistent with one another, further analysis of these results are omitted.

Hypothesis 6 predicted that the effect of ego-involvement on overall recall, message placement, and selective recall would be greater for those analyses in which involvement was measured by the value-functional measure of involvement than when the ordered alternatives measure was used. Thus, the main effect for Involvement (I) and the Attitude x Nature-of-Material x Involvement interaction (AIM) for the analyses based on the value-functional measure of involvement should have been larger than the same effects for the analyses based on the Sherif measure of involvement. (See Table 5.) Since none of the predicted effects were confirmed in Hypotheses 2, 4, or 5 for any of the four analyses, there was no evidence to support the superiority of predictive ability for either the value-functional or the Sherif measure of involvement. Likewise, Hypothesis 6 also implied that the Attitude x Involvement interaction effect (AI) would be larger for the value-functional measure analyses than for the ordered alternatives analyses. (See Table 3.) This prediction was not supported.
Hypothesis 7 predicted greater predictive ability for the measures of involvement taken after the speech than for those taken prior to the speech. Since none of the effects predicted in Hypotheses 2, 4, and 5 were confirmed, Hypothesis 7 could not be evaluated.

In analyzing Hypotheses 3, 4, and 5, an additional analysis of covariance was performed on the basic data using dogmatism scores, first, and familiarity scores, next, as covariates. None of these covariate adjustments changed the F values reported in Table 5 enough to affect the probability of the occurrence of any effect.

Chapter V has presented the results of this study as they related to the theoretical predictions stated in Hypotheses 1 through 7. Hypothesis 1, which predicted an increase in measured involvement under conditions of increased saliency, was not confirmed. The theoretical predictions of greater contrast of position, greater overall recall, and greater selective recall of a two-sided message as stated in Hypotheses 2, 4, and 5, respectively, were not confirmed for any of the analyses based on the four different measures for categorizing subjects according to involvement. Nor was any general tendency of persons to recall attitude-consistent material better than attitude-dissonant material observed, as

\[ \text{Ibid., pp. 595-618.} \]
predicted by Hypothesis 3. The superiority of the value-functional measure of ego-involvement over the latitude of rejection in predicting theoretical concomitants of ego-involvement could not be demonstrated since none of the analyses based on different measures of involvement showed any significant relationship to the theoretical concomitants of ego-involvement, thus offering no support for Hypothesis 6. Hypothesis 7 could not be confirmed for the same reason, since it theorized that there would be a larger relationship between the measures of ego-involvement and concomitant behaviors when the measure was taken after the speech rather than prior to it.

While none of the stated hypotheses were confirmed in the main analyses, certain trends were observed that may hold value for interpretation. First, in the analysis that tested Hypothesis 1, a statistically non-significant (p<0.10) trend for latitude of rejection to decrease under conditions of increased saliency was observed. Secondary analysis of the data for Hypothesis 2 showed a relatively consistent trend for higher levels of ego-involvement to produce greater assimilation under the condition in which subjects heard a taped speech, but an opposite trend for ego-involvement to produce greater contrast when the subjects listened to a live speaker. Secondary analysis
of Hypothesis 4 also showed a slight, but consistent trend for persons of greater ego-involvement to recall less of the message only when it was delivered by a live speaker. For the pre-speech Sherif measure of involvement, this trend was statistically significant ($p<.01$). An attempt was made to see if ego-involvement's effect on selective recall was dependent on condition of speech delivery, but the secondary analysis yielded results that were too inconsistent to warrant any general conclusions.
CHAPTER VI

DISCUSSION AND CONCLUSIONS

Chapter V presented the results as they related to the hypotheses of the study. This chapter will place those results into the perspective of prior research and will advance theoretical and methodological implications which this study suggests for future efforts. First, however, limitations concerning possible sources of error in the results will be outlined.

Limitations and Possible Sources of Error

The results of this study could have been affected by several sources of error including insensitive measures, inadequate subject selection, and artificiality of the experimental situation. The potential sources of error will be discussed to assess their likely effect on results.

The first kind of error to be considered is that associated with insensitive measures, beginning with a treatment of the dependent measures. The two main dependent criteria in this study were message placement
and recall of detail from a speech. There was no way of judging the reliability of the message placement measure based on the data in this study as only one measure was taken, and it was based on a scale that is not amenable to internal consistency reliability tests. It should be noted, also, that this particular technique for judging message position had not been used before. Earlier studies of perception of speaker's position asked subjects to place a mark across a line representing the attitude continuum, while this study averaged the scale values of those statements which subjects thought the speaker would find acceptable.\(^1\) The previous studies provided no reliability figures on the other measurement method. Since ambiguity of a message is one condition that has been shown to enhance assimilation-contrast effects, it is possible that ambiguity of the measuring instrument, as well, may enhance the message displacement phenomenon. Drawing a line across an ungraded continuum may have been a more unstructured task than judging perceived acceptability of specific attitude statements. Thus, the measuring instrument used in prior studies might have enhanced the occurrence of message displacement, while the measure in this study might have been enhanced by the measuring instrument.

\(^1\)Sherif, Sherif and Nebergall, *Attitude and Attitude Change*, p. 150.
too well-defined to allow the phenomenon to manifest itself.

Overall recall of the speech was measured by a test which required the subject to fill in blanks from the speech context with the word the speaker had used. Again, this specific measure had not been used before. An internal consistency test (Kuder-Richardson Formula No. 20) showed a reliability figure of .75 for the thirty-six item test. The reliability figure for the twelve-item test of neutral-material, which was a component part of the overall test, was .66, but the corresponding figures for the tests of pro-recall and con-recall were .47 and .52, respectively, both of which were low reliability figures. Thus, the reliability of the overall test was acceptable, but the reliability of the tests for specific types of recall was not, especially for the recall of pro- and con-material. This difficulty with the dependent criterion may well have affected the results, especially those related to selective recall.

In this study, independent and control variables included involvement, attitude, dogmatism, and familiarity. A test-retest reliability figure was obtained for both measures of involvement employed in this study using the eighty-eight subjects on whom the analyses
In Chapter V were based; the size of the correlation might have reflected some change due to the experimental stimulus and thus could have been somewhat lower than a test-retest figure on subjects not exposed to the stimulus speech. The reliability figure for the value-functional measure of involvement was .72, and the corresponding figure for the latitude of rejection measure was .52. In addition, the two different measures were correlated, both for the pre-speech and the post-speech measures. The correlation of the two prior to the speech was .11 and after the speech .09. If the value-functional measure were measuring the same thing as the latitude of rejection, the values should have been much higher than they were. Wilmot reported that the different measures of ego-involvement he used failed to correlate highly with one another, so these figures for inter-measure correlations were not entirely surprising. Nevertheless, the results cast doubt on the validity of the measures since they were theoretically measuring the same construct.

Attitude was measured by two different scales, Rosenberg's cognitive index and a nine-item ordered alternatives scale, treated as an interval scale.

Both measures showed relatively high reliability based on a test-retest correlation for the eighty-eight subjects in the main analysis. The figure for the cognitive index was .77 and for the ordered alternatives technique .80. A corresponding reliability check was run for those thirteen control subjects who had not heard the stimulus message. The reliability was .59 for the cognitive index and .83 for the Sherif measure.

In addition, the two different measures of attitude were correlated for all subjects, yielding a value of .65 for the pre-speech measures and .57 for the post-speech measures. The corresponding values for the control group were .75 for the pre-speech and .52 for the post-speech measures. Since these correlations were moderately high, the attitude measures were probably relatively stable.

Dogmatism, a control variable, was measured by the Schulze shortened modification of the Rokeach D-scale. It was expected that it would be significantly correlated with the involvement measures, since earlier studies had found such a relationship, but this was not the case. The correlation between the dogmatism scale and the value-functional measure of involvement was .02 and .06 for the pre-speech and post-speech measures, respectively. The corresponding figures for the correlation of dogmatism
with the latitude of rejection was .06 for both pre-speech and post-speech measures of involvement. Powell previously reported small to moderate correlations for both the relationship between dogmatism and latitude of rejection and the relationship between dogmatism and extremity of attitude. Though he did not report what form of the dogmatism scale he used, it was probably the complete forty-item scale. Since this study showed no significant relationship between dogmatism and involvement using the Schulze scale, and since no significant correlation between dogmatism and attitude extremity appeared, it seems likely that the shortened version of the dogmatism scale was not sufficiently sensitive to detect the relation between dogmatism and involvement.

A second possible source of error in the results could have been inadequate subject selection. The sample used was a convenience sample rather than a random sample. An earlier attempt had been made to fit the stimulus issue of this study to the population from which the sample would be drawn, that population being the students who were enrolled in Speech 110 at The Ohio State University during the Spring Quarter of 1972. As such, students in Speech 110 from previous quarters

were tested to find an issue on which there was a wide range of scores on ego-involvement. The issue selected was the question of whether the use and sale of marihuana should be legalized; the actual sample used in the study had a similar dispersion of involvement scores on this issue as those persons who were pretested in order to select the issue.

The persons in the sample, however, did not represent the complete range of the attitude continuum. There were more pro-legalization than anti-legalization subjects. Thus, when the subjects were divided into attitude categories, persons who were labelled "Unfavorable" were only slightly unfavorable, and those labelled "Neutral" were actually very slightly favorable toward legalizing marihuana. Consequently, the Unfavorable and Favorable attitude groups were not equivalent in their attitude extremity. This tendency to under-represent the anti-legalization position may have tended to reduce the size of any effects that were present.

Previous investigations were criticized earlier in this study for the large number of judgments required of subjects. The present study was open to the same criticism. Subjects participated in two sessions, one requiring about thirty minutes and the second an hour. They were asked to complete a total of ten forms. It
is quite possible that their motivation may have been reduced by these procedures, thus raising the size of the experimental error.

One of the control variables in this study may have introduced some error in the results. Manner in which the speech was delivered was not used as a major variable in the analyses of variance which were run (see Tables 3 and 5). The message placement scores and recall scores for live and taped speech conditions were combined in those analyses because of the small number of subjects per cell which would have resulted by adding another factor. Thus, whatever differential trends were produced by different conditions of speech delivery were obscured. An attempt was made through secondary analyses to investigate the existence of any interactive trends based on speech delivery condition. While these secondary analyses proved informative, at least in the relationship of attitude to message placement, it must be remembered that the analyses (based on Tables 4, 8, and 9) cannot be considered conclusive, but only suggestive, since the correlations were calculated on such a small number of cases.

Another possible source of error lies in the analyses themselves. All of the analyses of variance discussed in Chapter V were unequal cell analyses. A total of
eighty-eight subjects were broken down into nine Attitude x Involvement groups. This provided an average of about ten subjects per cell. The largest number-per-cell discrepancy was for analyses based on the pre-speech value-functional measure of involvement, which ranged from four to fifteen subjects per cell. The smallest number-per-cell discrepancy was for analyses based on the pre-speech ordered alternatives measure of involvement with the number varying from seven to thirteen. The difficulty with unequal cell analysis is that cells with fewer scores in them tend to produce a higher within cell variance thus inflating the estimate of experimental error. For this reason, the experimental error in this study might have been large, thus producing fewer significant findings.

Yet another source of error might have been the failure to take into consideration the variable of time of recall. Many of the early studies confirming the presence of a selective recall tendency noted that the selective recall phenomenon seemed to be enhanced over time. Yet, most of the early studies dealing with selective recall used an immediate recall and a delayed

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"Levine and Murphy, "The Learning and Forgetting of Controversial Material," p. 513 and Wallen, "Ego-Involvement as a Determinant of Selective Forgetting," p. 21."
recall test. On the other hand, the more recent studies which have not found selective recall, this study included, used only an immediate test of recall. It is possible that by using an immediate test of recall this study did not allow for optimal conditions for the occurrence of selective recall.

Finally, it should be noted that any conclusions are limited to recall or placement of a two-sided single speech stimulus whose source was represented in such a way as to enhance credibility. Had the material in the message been presented in a debate format with one speaker arguing for legalization of marihuana and another against it, the entire message stimulus might have seemed less objective and more threatening, thus promoting ego-threat and the tendency to selectively recall material. Similarly, if only one side of the issue had been presented to each subject, the degree of threat to the individual might have been heightened over that produced by the two-sided fence-straddling message used in this study. Finally, had the subjects become engaged in the experimental situation to the extent of doing more than just listening to a message and filling out several

forms, the degree of ego-involvement might have been heightened, and the predicted effects of ego-involvement might have become more apparent. In sum, it is probable that the message used in this study was not efficient in enhancing level of ego-involvement. The reason for failure to use a more engaging stimulus was the experimenter's concern that a stimulus situation might heighten involvement too much, and the sample would become too homogeneous with respect to ego-involvement. Apparently, this concern was unwarranted.

In general, the effect of these sources of potential error in the results would have been to produce an error in the conservative direction, or a Type II error. Unreliable or unstable measuring instruments would increase experimental error, thus reducing the chances of finding significant relationships. Similarly, the greater experimental error produced by the small number of subjects per cell would have tended to produce negative findings. Finally, the objective nature of the message stimulus would have probably decreased the degree to which situational involvement was enhanced for those who were potentially capable of becoming concerned with the issue. Thus, more significant results might have been obtained if the sources of error had been reduced.
Interpretation of Results

None of the seven hypotheses advanced in Chapter IV were confirmed. Some of the findings reported in Chapter V, however, are interesting in light of previous research.

No increase in measured ego-involvement as a result of increased saliency due to the presentation of the message was observed, either for the value-functional or the ordered alternatives measure of involvement. There was, though, a statistically non-significant trend for the latitude of rejection to narrow when measured after hearing the message. This effect appeared to be accentuated by the impact of the message as the decrease in latitude of rejection from pre-speech to post-speech was greatest for persons who heard the speaker in person.

The existence of this slight decrease in latitude of rejection should be weighed against previous findings. Miller found no tendency for the latitude of rejection to change after the subjects had been asked to engage in activity and listen to messages which were designed to enhance their perception of the importance of the water fluoridation issue.\(^6\) He had not allowed, however, for the measurement of a latitude of noncommitment.

\(^6\) Miller, "Involvement and Dogmatism as Inhibitors of Attitude Change," pp. 121-32.
but only for the measurement of the latitudes of rejection and acceptance. The number of statements accepted in this study tended to remain relatively stable from pre-speech to post-speech measurement, while the slight decrease in latitude of rejection was reflected in a mirror image increase of the latitude of noncommitment. Thus, it is possible that procedures employed by Miller obscured any change in the latitude of rejection. It is also possible, though, that the slight decline of ego-involvement was due to chance, especially since the effect was not statistically significant ($p < .10$).

The question remains as to why a person's involvement relevant to an issue should decrease after hearing a two-sided message dealing with controversial material about the issue. One explanation is that the speech was seen as a highly objective stimulus and tended to reduce threat to the subjects. It is possible, after all, to be thoroughly involved in situations where one places trust in others around him. In such cases, persons who are related positively to an issue of involvement may tend to become more objective, that is to be non-committal toward more positions. Thus, it may be important in dealing with the effects of ego-involvement to specify the nature of subjects' perceived environment; ego-involvement in which a person's important values are
threatened will undoubtedly produce different behaviors than ego-involvement in which his important values are reinforced.

Any event that intervened in time between the first and second measurement of ego-involvement could have been a potential explanation for the slight decrease in latitude of rejection from pre- to post-speech measure. Two other possibilities were considered. First, it was possible that the subjects were less motivated to fill out the scale the second time than the first, and since they were only required to mark the positions most acceptable and most objectionable to them, they might have saved time in completing the forms by simply not making any more marks than necessary. If such an explanation is valid, then it should also be true that there should be no trend for persons who participated only in the first session to have higher latitudes of rejection than those who participated only in the second session. This was not the case. The mean latitude of rejection for the persons completing just the first questionnaire was 3.72 (N=50), but the mean latitude for the persons completing only the second session was 3.53 (N=15) and 3.21 (N=19), respectively, for persons hearing the taped and live speech. While this difference was not statistically significant, it
did challenge the idea that the difference in size of latitudes from Session 1 to Session 2 was due to subjects being less motivated.

A second alternative explanation for the narrowed latitudes of rejection exhibited in Session 2 may be that the subjects were less willing to trust the experimenter during the second session. Because Session 2 required the completion of more forms and also required that the subjects provide their name on the forms (as they had during Session 1), they may have been slightly more inclined to distrust the experimenter; thus, they may have held back responses which they normally would have offered.

Sherif found that in judging the position of a two-sided political communication, subjects who were highly involved tended to assimilate the message less than did persons of less involvement. No significant findings regarding the relationship between ego-involvement and message placement were confirmed in the analyses of variance in Chapter V (see Table 3). The secondary analysis in which the data for persons hearing the taped speech and those data for persons hearing the live speech were treated separately suggested, though, that greater

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7Sherif, Sherif and Nebergall, Attitude and Attitude Change, pp. 161-63.
involvement levels tended to produce more assimilation with the taped message condition but more contrast with the live message condition. This suggestion, on the surface, appears to contradict the earlier finding since Sherif also used a taped two-sided message. However, it must be remembered that the source of his communication remained unknown, whereas the credibility of the speaker in this study was enhanced by introductory comments by the experimenter. Sherif also noted that source credibility is one factor that enhances assimilation of a message. In this particular case, the hearing of a highly credible speaker in a speech with lower impact (using only an auditory stimulus) may have resulted in the more ego-involved persons reacting more positively to it, thus producing assimilation. On the other hand, when the message's channel of delivery included visual input, the impact of the message was probably enhanced to the point that it appeared too aggressive. Thus, the highly involved subjects probably became less inclined to feel an identity with the speaker.

Hypothesis 3 predicted an overall selective recall effect, which was not observed; this reinforced the more recent studies which have failed to confirm the selective recall prediction established earlier in the 1940's and

8 Ibid., p. 148.
1950's. (See Chapter III.) The findings of this study do not offer strong reinforcement for the more recent studies, though, especially since the reliability figures for the pro-recall and the con-recall measures were quite low.

The prediction that ego-involved persons would score higher on overall recall of the two-sided message was not confirmed. To the contrary, there was a statistically significant trend for more involved persons to remember less from the live speech when the pre-speech ordered alternatives measure of involvement was used. This trend was not significant for any other measure of involvement, but a less pronounced similar trend was observed between involvement and recall of the live speech for the other measures. The same trend was not present with the data for the taped speech. Decreased recall of the speech material may be associated with the greater inclination of involved persons to contrast the live speech more than the less involved persons. This kind of effect would be consistent with Sherif's social-judgment theory, but it is important to note that the finding holds only in the case of the live speech.

Ego-involved persons should have been more inclined to selectively recall material than less involved persons according to Hypothesis 5. No such tendency was observed,
and a secondary analysis was performed to see if the trend was different for the taped and live speeches, thus obscuring the overall effect. Analysis of Tables 8 and 9 suggested that the patterns were not consistent enough to warrant any conclusions based on different effects which might be produced by the different speech delivery conditions. No previous studies have systematically varied levels of ego-involvement to determine the effect of attitude on what is recalled. The results of this study suggested no relationship between ego-involvement and selective recall, but the unreliable nature of the pro-material and con-material recall indicated that this failure to confirm should not be accepted as conclusive.

The results are least definitive on one of the more important questions investigated by this study, the relative ability of the value-functional and the ordered alternatives measures of ego-involvement to predict concomitant behaviors of involvement. The analyses of variance based on each of the involvement measures showed no relationship between ego-involvement and the dependent criteria. The secondary analysis suggested a relationship between ego-involvement and message displacement dependent on the kind of message delivery used, but this effect did not seem exceptionally stronger for
either measure, though it may have been slightly more
pronounced for the value-functional measure.

The value-functional measure of involvement was
suggested as a more direct measure of ego-involvement.
It is more direct, but based on experience gained in
this study, it appears to have certain deficiencies
relative to using latitude of rejection. First, it
was virtually impossible to find persons low in involve­
ment on the measure who had extreme attitudes. This
was due to the fact that if a person had an extreme
attitude on the Rosenberg cognitive index, he also
tended to have a high value-functional involvement score.
The correlations of attitude extremity, or absolute value
of the cognitive index, with the value-functional meas­
ure of involvement were .86 and .87 for the pre-speech
and the post-speech data, respectively. On the other
hand, the latitude of rejection measure allowed less
dependency between attitude extremity and involvement.
The value-functional measure also required more time
to administer, thereby increasing chances that the
motivation of subjects might be reduced.

Finally, it was theorized that the relationships
between ego-involvement and the dependent criteria would
be stronger when measured after the speech was heard rather
than prior to it. Again, since none of the predicted
relationships between ego-involvement and the dependent criteria were observed for any of the analyses, this hypothesis could not be confirmed. It might be noted that the negative correlation between involvement and overall recall of a live speech was significant only for the pre-speech Sherif measure of involvement, but this difference was opposite to the direction predicted in Hypothesis 4.

**Theoretical Implications**

So far, this chapter has detailed possible sources of error and discussed this study's results as they relate to prior research. This section will treat the theoretical implications offered by the study, after which suggestions for future research will be discussed.

This investigation has treated ego-involvement in the same way that Sherif conceptualized it, that is, the contextual arousal of a person's important values, groups, or attitudes. This view emphasizes the situational aspects of involvement, whereas other writers have not. Wilmot, as well as Zimbardo, has attempted to distinguish between "response-involvement" and "issue-involvement."\(^9\) Issue-involvement exists "if the mere

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presentation of the issue is sufficient to elicit concern and interest," while response-involvement "denotes the instrumental relationship of a given opinion or response to the achievement of a desired goal." Wilmot claimed that Sherif's construct was issue-involvement.

Wilmot's description of Sherif's ideas misrepresented the nature of ego-involvement; furthermore, I do not believe that the distinction between response-involvement and issue-involvement is a very useful one. It is important to remember that Sherif emphasized the situational arousal of a person's important values, groups, or attitudes in his definition of ego-involvement. It is this characteristic of the concept that distinguishes it from what Wilmot calls issue-involvement. Ego-involvement for Sherif is issue-involvement, but it is issue-involvement in a particular situation. Nor does it seem likely that just any stimulus related to one's object of potential involvement will arouse the same level of involvement, which is what the definition of issue-involvement offered by Zimbardo implies.

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The idea that "the mere presentation of the issue is sufficient to elicit concern and interest" suggests that one is observing an on-off type phenomenon. It seems more probable that there are varying levels of ego-involvement; thus, it is more feasible to view Sherif's concept of involvement as issue-involvement within a situation.

The distinction between response- and issue-involvement does not appear to be a useful one, either. The classic example of response-involvement is the case in which a subject is told that his grade on an assignment will depend on how well he performs some experimental task, thereby relating his involvement with the course to his response on some other task. The question must be raised: What makes this situation different from the situation in which a person who is an avid advocate of smoking marihuana fills out an attitude scale relevant to the legalization of marihuana? Are not both subjects involved with a response, though for different reasons? The basic difference is that in the first case the relationship between one's attitude toward a course and the experimental task is not initially clear, while in the second case the relationship

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between the person's attitude and the task is more obvious. Thus, it requires extra effort in the first case to involve the subject in the response. The differences in situations where experimenters try to work with ego-involvement is not so much a difference of response- versus issue-involvement, but rather a matter of how much effort is required to get the subject to see the relationship between some situational response and his important values, groups, or attitudes.

This leads to another possible way of categorizing involvement that might prove useful. There are cases in which a person could become emotionally aroused about some issue providing the proper elements were present; there are other cases in which this situational arousal has already occurred. The first of these two circumstances will be referred to as potential involvement. The second will be called kinetic, or actual, involvement. This distinction, which is an analogy from the physical sciences, is made to emphasize the situational nature of ego-involvement. It should help us to keep clear the difference between measuring ego-involvement within the situational context versus measuring it in a social vacuum.

A second way of classifying involvement was suggested by the results. Ego-involvement was conceptualized by
Iverson and Reuder as occurring only in threatening situations, while Sherif assumed a broader perspective in which the presence of ego-involvement in positive surroundings was considered. The results of this study suggested that the two-sided message might have been influential in reducing level of ego-involvement as measured by latitude of rejection. One interpretation of this finding was that the two-sided analytic speech produced greater objectivity on the part of the listeners. It appears that the listeners' perceptions of the social environment (whether it is hostile or supportive) can serve as the basis for categorizing ego-involvement in yet another way. "Threat-involvement" could be used to refer to situations in which a person's important objects of involvement become relevant in a hostile social atmosphere, and "positive-involvement" could refer to situations in which a person's object of involvement becomes relevant in supportive social contexts. The results of this study suggest that the variable of social environment may play an important role in the determination of what psychological behaviors will be exhibited by ego-involved persons.

These suggestions for categorizing types of ego-involvement reflect what I consider to be a significant need to view the variable of ego-involvement as a *situational* variable as opposed to a personality or topic variable. Previous research in Speech Communication has neglected this aspect of involvement. While the present study offers no empirical data to support the significance of measuring ego-involvement within a situation in which it is aroused, it still seems reasonable to assume that there should be a stronger relationship between measured ego-involvement and psychological concomitants when potential involvement becomes salient.

The results of this study did not appear to clarify the relationships between ego-involvement and message placement, overall recall, and selective recall of a two-sided controversial message. Nevertheless, we should raise the question of what can be said about these relationships at this point in time. The results suggested that greater levels of involvement tend to produce greater assimilation for a two-sided message that is taped and to which a positive source is attributed, but that greater levels of involvement have the opposite effect for persons hearing a speaker deliver the speech in person. Sherif had previously observed less assimilation with heightened levels of involvement...
for persons listening to a taped two-sided political communication with no source attributed to it. It should be noted, however, that the generalization that ego-involved persons are less likely to assimilate and more likely to contrast a message's position was not a universal finding in Sherif's research. With a slightly Republican message, he found that ego-involved Republicans holding extreme positions tended to assimilate the message. Thus, he suggested that if the message were sufficiently close to an involved person's own position (not within his latitude of rejection), the opposite effect of greater assimilation for ego-involved persons would be observed.

The present study adds another dimension of contingency—impact of message. A prediction for future research would be that when subjects listen to a two-sided controversial message to which a positive source is attributed and which is minimal in message impact, there will be a tendency for ego-involved persons to assimilate the message more than non-involved subjects. When, however, the conditions are changed so that a two-sided controversial message with a positive source and with greater message impact is heard, there should

15Sherif, Sherif and Nebergall, Attitude and Attitude Change, pp. 155-61.
be an opposite effect so that ego-involvement will enhance the likelihood of contrast. Other hypotheses can be derived from this basic idea; they should be based on several variables which contribute to message displacement effects including source credibility, ambiguity of message position, distance of own position from speaker's position, level of involvement, and message impact.

What is the relationship between ego-involvement and overall recall of a controversial message? The review of the literature in Chapter III suggested that the relationship was dependent on the level of anxiety produced by the message stimulus. Ego-involvement should be positively related to overall recall for conditions in which the message produces minimal anxiety, but involvement should be negatively related to overall recall for messages which produce anxiety sufficient to be psychologically disorganizing. The social-judgment perspective could be used to predict that overall recall will be related to message perception with greater recall being dependent on the degree to which the message is assimilated. If the live message in this study can be considered psychologically disorganizing, the results would support both theoretical perspectives. A slight tendency for more involved persons to have lower overall
recall scores was observed, but only for those persons hearing the speaker in person. The social-judgment perspective is better supported, since it did not appear that the live message was exceptionally threatening to the subjects.

Future studies should anticipate a positive correlation between involvement and recall only if the message is assimilated. As message impact increases, there should be a negative relationship between involvement and assimilation, and thus a negative relationship between overall recall and involvement.

Finally, what of the relationship between ego-involvement and selective recall? In fact, we might ask whether or not selective recall occurs at all? The discrepancy in findings between the earlier studies and the investigations of the 1960's with respect to selective recall has already been discussed. This study adds little to the previous ones on this question.

The most likely conclusions is that selective recall does operate, but only under certain conditions. Studies such as those by Jones and Aneshansel and Jones and Kohler elaborated on these contingencies.\(^\text{16}\) The

negative results of Waly and Cook and Greenwald and Sakumura are not convincing. The stimuli for recall used by these studies were not complex communications, and both studies failed to use a delayed test of recall, on which some of the earlier studies had observed a greater tendency to selectively recall material.

The probable effect of ego-involvement should be to enhance selective recall, especially under conditions in which a stronger stimulus message is used. This effect is probably mediated by the message displacement phenomenon, and so future studies investigating the relationship of ego-involvement to selective recall would do well to observe the effect of message displacement as well.

**Methodological Implications**

Aside from the theoretical implications offered by this study, there are also methodological suggestions to be considered. One of the most important outcomes of the study was the discovery of the significance of the message impact variable in determining the effects of ego-involvement. The difference in speech delivery

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condition was interpreted as a difference in the impact of the message. Previous studies concerned with the effect of ego-involvement on attitude change have used different kinds of message delivery, such as taped messages and printed ones, but none have systematically manipulated this variable. Future studies should as a minimum control for the effect of impact. The present study was unable to fully analyze the effect of impact because there were insufficient subjects per cell. It was demonstrated, however, that the condition of delivery variable was influential in producing greater overall recall (see Table 6).

The results of this study did not provide evidence indicating that either the value-functional measure or the ordered alternatives measure was predictive of the theoretical concomitants of involvement. This may be due to unidentified variables that mediate the relationships between ego-involvement and overall recall, selective recall, and message placement. One such variable may be message impact. A better test for the relative predictive ability of the value-functional measure of involvement might be to measure its relationship with amount of attitude change induced by a belief-discrepant message. A larger body of research has been generated to support an inverse relationship between ego-involvement
and attitude change than that which shows a relationship between ego-involvement and recall. Thus, a test of the value-functional measure should be based on an empirically more stable criterion.

Other studies are needed to examine the relationship between ego-involvement and message placement, overall recall, and selective recall. Improvements over the present one could be accomplished by: (1) putting message impact into the design, (2) using a larger number of subjects to increase the stability of the findings, (3) developing a more reliable measure of pro- and con-recall, (4) using partisan as well as two-sided neutral messages, and (5) using a delayed as well as an immediate recall test. In addition, should future researchers wish to control for the variable of dogmatism, it is suggested that the longer, more reliable forty-item dogmatism scale be used. There is reason to believe that the Schulze measure was not adequately sensitive in this study.

Future studies should also investigate and specify the situational elements which lead to greater or lesser involvement. The question of how communication affects involvement is a significant one. The results of this study indicated that a two-sided message on a controversial issue produced a smaller latitude of rejection.
Would a debate type format, with more potential for threat-involvement, tend to increase the size of the latitude of rejection? Also, does the perception of agreement between oneself and the social group around him decrease the size of his latitude of rejection? These specific questions refer to the more general issue of how greater audience involvement in a situation may be secured. The exploration of how situational elements, such as message impact, degree of threat, and self-identity manifested in the situation, produce greater involvement will help to provide a more complete theory of communication.

Summary

The purpose of this study was to investigate the relationship between ego-involvement and the criteria of message displacement, overall recall, and selective recall of a two-sided controversial message. A secondary goal was to validate a new measure of ego-involvement, a value-functional measure based on Rosenberg's cognitive index. Ego-involvement, as measured by the ordered alternatives method and the value-functional measure, was hypothesized to be directly associated with a greater tendency to contrast the message, higher overall recall, and a greater tendency to selectively recall material. The study hypothesized larger relationships between
ego-involvement and the criteria when involvement was measured: (1) by the value-functional measure as opposed to the ordered alternatives method, and (2) after rather than before the message. Increased involvement after hearing the message was also predicted.

Fifty subjects listened to a taped speech and another thirty-eight to a live speech presenting arguments and details on the issue of legalizing marihuana. The speech contained pro-, con-, and neutral-material. Subjects had been pretested ten to thirteen days previously to determine their attitudes and involvement in the issue. After hearing the message, subjects rated the speaker's position, completed rating forms indicating their attitude and level of involvement for a second time, and recalled material from the speech.

Data for the message placement prediction were analyzed by four 3 x 3 analyses of variance, each of the four analyses being based on a different measure of involvement for categorizing subjects into low, middle, and high involvement groups. The other factor was attitude: unfavorable, neutral, and favorable.

Data for the overall recall and selective recall predictions were tested by four repeated measures, 3 x 3 x 3 analyses of variance with each analysis based on a different measure of involvement. Attitude was the
second factor (unfavorable, neutral, and favorable), and nature-of-material (pro, con, and neutral) the third, being the repeated measure.

Results of these analyses showed no relationship between ego-involvement and any of the criteria. Secondary analyses were performed in which data for persons hearing the taped speech and the speaker in person were analyzed separately. (Data for the two groups had been combined in the main analyses.) The secondary analyses suggested a positive association of ego-involvement with assimilation of the message for persons hearing the taped speech, but the reverse was found for the live message. In addition, the persons hearing the live speaker, but not those hearing the taped message, exhibited a slight tendency to remember less if they were more ego-involved. No interactive trends were observed in the secondary analysis of the data for selective recall. Since none of the main analyses showed any significant effect of ego-involvement on the criteria, the hypotheses predicting greater association of ego-involvement with criteria according to type and time of measure could not be supported.

Two 2 x 3 analyses of variance were run using involvement as measured by both methods as the dependent variable. Time of measure was the first factor
(pre- and post-speech), and condition of delivery the second (none, taped, and live). No significant increase in measured involvement occurred from pre- to post-speech for either measure, but there was a statistically non-significant trend for the latitude of rejection to narrow.

Discussion of these results emphasized the need to specify conditional variables on which the dependent criteria may be contingent, including message impact. Viewing ego-involvement more as a situational variable and less as a personality or issue variable was proposed.
APPENDIX I
QUESTIONNAIRE 1

These forms constitute a survey of the values, beliefs and attitudes of college students which is being conducted as part of a communication research project to better understand the nature of audiences which are comprised mainly of college students. This research is being conducted by Mr. Robert Ambler, Graduate Teaching Associate in the Department of Speech Communication at Ohio State University.

The instructions for each of the forms that are included here are at the top of each page. These will be explained briefly prior to your filling out the forms.

At a later date during this quarter, you will be asked to participate in a second session of this study. While the information you provide in this survey will remain anonymous, we would like for you to give us your name, recitation instructor, hour of recitation class and other relevant information listed below so that a more elaborate analysis of the data can be performed. Your participation in this study is greatly appreciated.

NAME_____________________ RECITATION INSTRUCTOR______

RECITATION HOUR_____

SEX Male Female (Circle one) AGE______

CLASSIFICATION Freshman Sophomore Junior Senior Grad. (Circle one)

COLLEGE AND MAJOR______________________________
PERSONAL BELIEFS AND IDEAS*

The following is a study of what people think and feel about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

+1: I AGREE A LITTLE -1: I DISAGREE A LITTLE
+2: I AGREE ON THE WHOLE -2: I DISAGREE ON THE WHOLE
+3: I AGREE VERY MUCH -3: I DISAGREE VERY MUCH

1. Fundamentally, the world we live in is a pretty lonely place.
2. It is often desirable to reserve judgment about what's going on until one has a chance to hear the opinions of those one respects.
3. A person who thinks primarily of his own happiness is beneath contempt.
4. In the history of mankind there have probably been just a handful of really great thinkers.
5. Most people just don't know what's good for them.
6. Once I get wound up in a heated discussion I just can't stop.
7. The worst crime a person can commit is to attack publicly the people who believe in the same thing he does.

8. In this complicated world of ours the only way we can know what is going on is to rely upon leaders or experts who can be trusted.

9. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as ones own.

10. While I don't like to admit this even to myself, I sometimes have the ambition to become a great man like Einstein, or Beethoven or Shakespeare.

PERSONAL VALUES

Below are a list of values which are sometimes listed by people as being desirable. We are interested in knowing how desirable these goals are to you. Rate them according to how much satisfaction they give you using the following scale:

-3: Gives me maximum dissatisfaction
-2: Gives me much dissatisfaction
-1: Gives me a little dissatisfaction
0: Gives me neither satisfaction or dissatisfaction
+1: Gives me a little satisfaction
+2: Gives me much satisfaction
+3: Gives me maximum satisfaction

1. People looking out for the welfare of others.

2. People of different backgrounds getting to know each other better.

3. All human beings having equal rights.

4. Getting advice on important problems.

5. People having the right to participate in making decisions which will affect them.

6. People upholding high moral principles.

7. Gaining a better understanding of ones self.

8. People understanding one another better in their relationships.

9. Creating a safe world in which to live.
10. Having good physical and mental health.
11. People making an important contribution to society.
12. Providing a secure atmosphere in which citizens may feel free from fear.
13. People respecting the rights of others.
14. Gaining a more precise understanding of one's environment.
15. Helping to develop better treatments for medical illnesses.
16. People going by the rules.

**BELIEFS ABOUT THE LEGALIZATION OF MARIHUANA**

People quite often have beliefs about what they think the adoption of specific social policies will accomplish. Assuming that the social policy of legalizing marihuana were carried out, what results would it be instrumental in producing? You will be asked to indicate your beliefs about the policy of legalizing marihuana by rating the degree to which you believe that this policy would lead to or block the goals listed below. Use the following rating scale:

+3: Policy would completely attain goal
+2: Policy would contribute much to goal
+1: Policy would contribute a little to goal
0: Policy is unrelated to goal attainment
-1: Policy would work against goal a little
-2: Policy would work against goal much
-3: Policy would completely block the goal

1. People looking out for the welfare of others.
2. People of different backgrounds getting to know each other better.
3. All human beings having equal rights.
4. Getting advice on important problems.
5. People having the right to participate in making decisions which will affect them.
6. People upholding high moral principles.
7. Gaining a better understanding of oneself.
8. People understanding one another better in their relationships.
9. Creating a safe world in which to live.
10. Having good physical and mental health.
11. People making an important contribution to society.
12. Providing a secure atmosphere in which citizens may feel free from fear.
13. People respecting the rights of others.
14. Gaining a more precise understanding of one's environment.
15. Helping to develop better treatments for medical illnesses.
16. People going by the rules.

ATTITUDES ABOUT LEGALIZING MARIHUANA

We are interested in knowing how you feel about the issue of legalizing marihuana; in order to find this out, we are asking you to evaluate the attitude statements listed below in the following manner.

First, read carefully through all of the statements below and select the statement which comes closest to your own position on the issue. Put the symbol, MA, in the space in front of that statement to stand for most acceptable. Then select the statement with which you most disagree and put the symbol, MO, in the space by that statement to stand for most objectionable. If there are other statements which you would also accept, put the symbol, A, in front of those to stand for acceptable. Finally, if there are statements in addition to the one you marked MO to which you would also object, put the symbol, O, in front of them. Remember, it is not necessary that you have a symbol in front of every statement, but you must have at least one statement marked MA and one marked MO.
1. It is absolutely imperative that the sale and use of marihuana be legalized without any restrictions.

2. I would legalize the sale and use of marihuana without any restrictions.

3. I would legalize the sale of marihuana with restrictions such as minimum age for purchase.

4. The use of marihuana on a prescriptive basis for medical purposes only should be allowed.

5. It is hard to decide whether the sale and use of marihuana should be permitted.

6. Current punishment for the use of marihuana probably should be reduced, but its sale should remain illegal.

7. I'd continue to make the sale and use of marihuana illegal.

8. I am 1,000 percent against ever legalizing marihuana.

9. Current legislation against the sale of marihuana should be stiffened to include the death penalty for the first time conviction of sales to minors.
INSTRUCTIONS FOR FORM A

We are concerned with your ability to predict a person's attitude on an issue based on general comments he makes about the topic. In this case, we are interested in knowing how accurately you can predict how the speaker you have just heard would react to a series of attitude statements. On the next page, you will find nine different statements of attitude on this issue of legalizing marihuana. Follow the instructions below:

1. Read through all of the statements.

2. Pick out the statement which you think would be closest to the speaker's position and put the symbol, MA, by it.

3. Check the rest of the statements. If you think there are any others which the speaker might accept, put the symbol, A, by them.

4. Now, find the statement which you think the speaker would object to most, and mark it MO.

5. Finally, check the rest of the statements to see if there are any others to which the speaker would probably object. Mark these O.

Remember, it is not necessary that you have a symbol in front of every statement, but you must mark one statement and only one statement as MA, and you must mark one statement and only one statement as MO.

NAME____________________________
SEX Male  Female (Circle one)  AGE_______
CLASSIFICATION Freshman  Sophomore  Junior  Senior  Grad. (Circle one)
COLLEGE AND MAJOR____________________________
FORM A

Symbols for Marking Scale

MA: The one statement that you think is closest to the speaker's own position.
A: Any other statements that you think the speaker will also accept besides MA.
MO: The one statement to which you think the speaker most objects.
O: Any other statements to which you think the speaker also objects besides MO.

1. It is absolutely imperative that the sale and use of marihuana be legalized without any restrictions.
2. I would legalize the sale and use of marihuana without any restrictions.
3. I would legalize the sale of marihuana with restrictions such as minimum age for purchase.
4. The use of marihuana on a prescriptive basis for medical purposes only should be allowed.
5. It is hard to decide whether the sale and use of marihuana should be permitted.
6. Current punishment for the use of marihuana probably should be reduced, but its sale should remain illegal.
7. I'd continue to make the sale and use of marihuana illegal.
8. I am 1,000 percent against ever legalizing marihuana.
9. Current legislation against the sale of marihuana should be stiffened to include the death penalty for the first time conviction of sales to minors.
INSTRUCTIONS FOR FORMS B, C, AND D

The three forms that follow are once again an Indication of your values, beliefs and attitudes. The instructions for each of these forms are included at the top of each page, but they will be briefly explained prior to your completing them.

Form B calls for you to indicate the degree to which you feel certain selected goals are desirable by rating each of the goals on a rating scale which ranges from +3 (Gives me maximum satisfaction) to -3 (Gives me maximum dissatisfaction). If you have no positive or negative feelings toward the goal, you should rate it as 0 (zero).

Form C asks you to tell us your beliefs about the issue of legalizing marihuana by rating the degree to which you think the social policy of legalizing marihuana would lead to each of the 16 different goals listed on that form. Ratings will vary between +3 (Policy would completely attain the goal) to -3 (Policy would completely block the goal). If the policy of legalizing marihuana is irrelevant to a goal, you should give it a rating of 0 (zero).

Finally, Form D asks you to indicate your feelings toward the policy of legalizing marihuana by selecting the attitude statements with which you agree and disagree from a collection of attitude statements. Be sure and go over the specific instructions on this form.

FORM B: PERSONAL VALUES

Below are a list of values which are sometimes listed by people as being desirable. We are interested in knowing how desirable these goals are to you. Rate them according to how much satisfaction they give you using the following scale:

-3: Gives me maximum dissatisfaction
-2: Gives me much dissatisfaction
-1: Gives me a little dissatisfaction
0: Gives me neither satisfaction or dissatisfaction
+1: Gives me a little satisfaction
+2: Gives me much satisfaction
+3: Gives me maximum satisfaction
1. People looking out for the welfare of others.
2. People of different backgrounds getting to know each other better.
3. All human beings having equal rights.
4. Getting advice on important problems.
5. People having the right to participate in making decisions which will affect them.
6. People upholding high moral principles.
7. Gaining a better understanding of oneself.
8. People understanding one another better in their relationships.
9. Creating a safe world in which to live.
10. Having good physical and mental health.
11. People making an important contribution to society.
12. Providing a secure atmosphere in which citizens may feel free from fear.
13. People respecting the rights of others.
14. Gaining a more precise understanding of one's environment.
15. Helping to develop better treatments for medical illnesses.
16. People going by the rules.

FORM C: BELIEFS ABOUT THE LEGALIZATION OF MARIHUANA

People quite often have beliefs about what they think the adoption of specific social policies will accomplish. Assuming that the social policy of legalizing marihuana were carried out, what results would it be instrumental in producing? You will be asked to indicate your beliefs about the policy of legalizing marihuana by rating the degree to which you believe that this policy
would lead to or block the goals listed below. Use the following scale:

+3: Policy would completely attain goal
+2: Policy would contribute much to goal
+1: Policy would contribute a little to goal
0: Policy is unrelated to goal attainment
-1: Policy would work against goal a little
-2: Policy would work against goal much
-3: Policy would completely block the goal

1. People looking out for the welfare of others.
2. People of different backgrounds getting to know each other better.
3. All human beings having equal rights.
4. Getting advice on important problems.
5. People having the right to participate in making decisions which will affect them.
6. People upholding high moral principles.
7. Gaining a better understanding of oneself.
8. People understanding one another better in their relationships.
9. Creating a safe world in which to live.
10. Having good physical and mental health.
11. People making an important contribution to society.
12. Providing a secure atmosphere in which citizens may feel free from fear.
13. People respecting the rights of others.
14. Gaining a more precise understanding of one's environment.
15. Helping to develop better treatments for medical illnesses.
16. People going by the rules.
FORM D: ATTITUDES ABOUT LEGALIZING MARIHUANA

We are interested in knowing how you feel about the issue of legalizing marihuana; in order to find this out, we are asking you to evaluate the attitude statements listed below in the following manner.

First, read carefully through all of the statements below and select the statement which comes closest to your own position on the issue. Put the symbol, MA, in the space in front of that statement to stand for most acceptable. Then select the statement with which you most disagree and put the symbol, MO, in the space by that statement to stand for most objectionable. If there are other statements which you would also accept, put the symbol, A, in front of those to stand for acceptable. Finally, if there are statements in addition to the one you marked MO to which you would also object, put the symbol, O, in front of them. Remember, it is not necessary that you have a symbol in front of every statement, but you must have at least one statement marked MA and one marked MO.

1. It is absolutely imperative that the sale and use of marihuana be legalized without any restrictions.

2. I would legalize the sale and use of marihuana without any restrictions.

3. I would legalize the sale of marihuana with restrictions such as minimum age for purchase.

4. The use of marihuana on a prescriptive basis for medical purposes only should be allowed.

5. It is hard to decide whether the sale and use of marihuana should be permitted.

6. Current punishment for the use of marihuana probably should be reduced, but its sale should remain illegal.

7. I'd continue to make the sale and use of marihuana illegal.

8. I am 1,000 percent against ever legalizing marihuana.

9. Current legislation against the sale of marihuana should be stiffened to include the death penalty for the first time conviction of sales to minors.
INSTRUCTIONS FOR FORMS E AND F

The two forms contained herein are tests of your knowledge about the issue of legalizing marihuana and of your recall of the speech which you heard previously. Both measures use the same general technique which is to ask you to fill in the spaces where we have omitted key words.

Form E is a passage which you have not heard or seen before. It is designed to tell us how much you know about the issue of legalizing marihuana. In completing it, you should follow these instructions:

1. Put one word and one word only in each space; do not leave any spaces blank.
2. If you have particular difficulty with a space, make the best guess you can and go on.
3. Fill out each space as you go, and do not go back to change your answers.
4. Complete all of Form E before going to Form F.

Form F contains parts of the speech you heard delivered today. Once again, key words have been deleted and your task is to fill in the blank spaces. This will serve as a test of your recall of the speech.

Please do not confer with anybody else on this task, as we are interested in what you remember as an individual.

FORM E: KNOWLEDGE ABOUT LEGALIZING MARIHUANA

The recent report of the National Commission on Marihuana and Drug Abuse does not stand as a definitive work on the effects of marihuana. Other reports have preceded it, and others will probably follow it. During the _______, the _______ Hemp Commission also raised the question of possible damage caused by the smoking of marihuana. The most significant American
report on this matter prior to the recent Commission's report was from a group appointed by Mayor ________ of New York City. Its findings were published during the ________.

Though the National Commission's report is not the first one, it contains some interesting findings and conclusions. One of the most interesting is its suggestion to ________ marihuana rather than to legalize it. Basically, this amounts to an attempt to penalize the ________ rather than the ________. In general, the Commission recommended ________ penalties for the use of the drug.

The Commission's attitude toward the use of marihuana was generally _________. Thus, they recommended steps which would ________ its use.

Smoking marihuana has been a legal taboo since the decade of the _________. It was during that time that the Federal Bureau of ________ conducted a strong anti-marihuana campaign under the direction of ________ Anslinger claiming that marihuana was a ________ drug.
FORM F: RECALL OF SPEECH ON MARIHUANA*

During the past ______ years, the drug that most of us call marihuana or pot has become more popular and easier to get hold of. Marihuana was known and used before the 1950's in America, but it was generally thought to be a ______ man's high or a symbol of ______ youth. (N)

Figures from surveys made by the Gallup Poll show that the percentage of all college students who have tried pot jumped from ______ percent in the Spring of 1967 to 20 percent two years later. From early 1969 to late 1970, that figure went up to about ______ percent. Marihuana is, of course, used more by younger people than by older people. As much as 40 percent of the 20 year old population has probably smoked marihuana. On the other hand, only ______ percent of those over 50 have ever tried it. (N)

And the raw materials for producing marihuana are readily available here in the States. ______ sativa was grown in the hills of ______ during the ______

*Each of the paragraphs is followed by a letter enclosed in parentheses to represent the judged attitudinal nature of the material recalled in the paragraph. Pro-, con-, and neutral-material are represented by P, C, and N, respectively. These codings were not on the form administered to subjects, but are provided for the reader's convenience.
century as a source of __________, which was used for the rigging of ships. (N)

As some of you may know, marihuana comes from the leaves and __________ of the plant. But the pioneers of early days found the tough __________ of the plant more useful for making ropes. (N)

For many years, opponents of legalization have warned of marihuana's potential damage to mental health. Two Philadelphia _________ recently presented evidence in the Journal of the AMA which they say shows a connection between the use of pot and such problems as _________ delusions, suicide attempts, and sexual promiscuity. A group of thirty-eight patients ranging in age from thirteen to twenty-four are described by Dr. Harold Kolansky and Dr. William Moore in a report that has been called by a spokesman for the AMA "the _________ real evidence based on good research, of harmful effects of smoking marihuana." Eight persons had become clearly __________, and _________ had attempted suicide. (C)

Other persons argue that smoking marihuana may lead to physical damage to the human body. Four British doctors recently reported that _________ patients, who were _________ users of marihuana, were found to display several symptoms of cerebral atrophy such as _________, loss of recent memory, poor concentration, depression,
inefficiency, and superficiality. (C)

Often the report of the Commission on Marihuana and Drug Abuses's statement is cited on this point. It says that: "No conclusive evidence exists of any physical damage, disturbances of bodily processes or proven human ________ attributable solely to even very high doses of marihuana. Recently, animal studies demonstrated a relatively large margin of safety between the psychoactive dose and the physical and behavioral toxic and ________ dose. Such studies seemed to indicate that safe human study could be undertaken over a ________ dose range. (P)

One doctor expressed his feelings as follows: "The fact that Prohibition was a failure doesn't make alcoholism a good thing and the ________ million or so alcoholics we have are no bargain. Therefore, since there is no ________ use for marihuana, it seems rather silly to legalize its use to initiate a second headache." (C)

On the other side, note that at a recent meeting of a psychiatric conference over ________ of 150 professionals surveyed said that marihuana should be made available with no more restrictions than pertain to ________. ________ out of every ten persons surveyed felt that the laws about sale and possession of
marihuana should be changed in such a way as to either abolish them or make them less severe. (P)

A sore point for many marihuana smokers is the enforcement of the laws. Enforcement of the laws about the use and possession of pot has become ________ in the last few years. The FBI reports that in the period from 1965 to 1969 there was a ________ fold increase in the number of arrests due to marihuana use. (P)

The National Commission on Marihuana reflects this kind of thinking when it says: "For whatever reasons, a substantial ________ of the American public opposes the use of marihuana, and would prefer that their fellow citizens abstain from using it. In the National Survey, ________ percent of the adult public agreed with the statement that 'using marihuana is morally offensive.'" (C)

Those favoring legalization come back by saying that respect for the law cannot be maintained when members of society are discriminated against. A case mentioned to support this idea is that of ________ poet and political activist John Sinclair, who was given a ________ year sentence for possessing only two marihuana cigarettes. Specifically, Stanford lawyer John Kaplan has said that: "Whether or not the police behave impeccably, their enforcement of the marihuana
laws will bear unequally on different groups. As a result, marihuana enforcement heightens the sense of differential treatment, which contributes to the ______ of three groups that we might most wish to bring into the mainstream of our society: the alienated ______ drug user, the high school youth, and the inhabitants of our urban Negro and Spanish-American ghettos." (P)
APPENDIX III
MARIHUANA MESSAGE*

During the past fifteen years, the drug that most of us call marihuana or pot has become more popular and easier to get hold of. Marihuana was known and used before the 1950's in America, but it was generally thought to be a poor man's high or a symbol of alienated youth. Today, its use has grown such that as of 1972, the National Commission on Marihuana and Drug Abuse estimates that every ninth person you meet on the street has tried marihuana at least once, and about eight million Americans still use it. There is, according to the Commission, a small hard-core group of about 1 of every 200 persons who continue to use the drug on a regular basis, or at least once a day. (N)

The increase of marihuana usage has been greatest among persons like ourselves. Figures from surveys made by the Gallup Poll show that the percentage of all college students who have tried pot jumped from 5 percent

*Each paragraph is followed by a letter enclosed in parentheses to represent the attitudinal nature of the material presented in that paragraph. Pro-, con-, and neutral-material are represented by P, C, and N, respectively.
in the Spring of 1967 to 20 percent two years later. From early 1969 to late 1970, that figure went up to about 40 percent. Marihuana is, of course, used more by younger people than by older people. As much as 40 percent of the 20 year old population has probably smoked marihuana. On the other hand, only 5 percent of those over 50 have ever tried it. (N)

It is really quite surprising that the widespread use of pot is such a recent event in this country. After all, its use as a psychoactive agent has been known in many other countries for decades. And the raw materials for producing marihuana are readily available here in the States. Cannabis sativa was grown in the hills of Kentucky during the nineteenth century as a source of hemp, which was used for the rigging of ships. Apparently, no one got the idea to smoke it during those early days, even though it is well known that George Washington raised the plant. (N)

As some of you may know, marihuana comes from the leaves and stems of the plant. But the pioneers of early days found the tough stalk of the plant more useful for making ropes. (N)

Today, I would like to discuss the issue of legalizing marihuana. Under the provisions of the Marihuana Tax Act of 1937, you're liable to some very stiff penalties if you use or have any of the drug in your possession.
Marihuana's illegality, along with its increased usage during the last few years, has led to great controversy. Perhaps, through looking at what has been said about the issue, we can come to a clearer idea of what the question is about. (N)

For many years, opponents of legalization have warned of marihuana's potential damage to mental health. Two Philadelphia psychoanalysts recently presented evidence in the Journal of the AMA which they say shows a connection between the use of pot and such problems as paranoid delusions, suicide attempts, and sexual promiscuity. A group of thirty-eight patients ranging in age from thirteen to twenty-four are described by Dr. Harold Kolansky and Dr. William Moore in a report that has been called by a spokesman for the AMA "the first real evidence based on good research, of harmful effects of smoking marihuana." Eight persons had become clearly psychotic and four had attempted suicide. One case of particular interest was a seventeen year old boy gradually introduced to marihuana by an older man who had homosexually seduced him. He withdrew from reality, developed an interest in the occult and saw himself as the Messiah. Ultimately, he made three attempts at suicide by slashing his wrists, but gradually got better after hospitalization and withdrawal from
the marihuana habit. The authors also reported that thirteen of the eighteen girls studied had become sexually promiscuous after relatively short periods of pot smoking. (C)

Other persons argue that smoking marihuana may lead to physical damage to the human body. Four British doctors recently reported that ten patients, who were heavy users of marihuana, were found to display several symptoms of cerebral atrophy such as headaches, loss of recent memory, poor concentration, depression, inefficiency, and superficiality. (C)

Those who advocate the legalization of marihuana view much of the previously mentioned reports as faulty research. Dr. Edward Ludwig of the State University of New York challenged earlier findings of Drs. Kolansky and Moore on the grounds that they used no control group. He says that "there is no scientific validity to their findings." Often, the report of the Commission on Marihuana and Drug Abuse's statement is cited on this point. It says that: "No conclusive evidence exists of any physical damage, disturbances of bodily processes or proven human fatalities attributable solely to even very high doses of marihuana. Recently, animal studies demonstrated a relatively large margin of safety between the psychoactive dose and the physical and behavioral
toxic and lethal dose. Such studies seemed to indicate that safe human study could be undertaken over a wide dose range." (P)

Whatever view you take, you can find plenty of experts or people in general to support you. If you oppose legalization, look at the National Commission's report when it refers to how doctors feel about legalizing marihuana: "The consensus among doctors was that marihuana, the drug, poses some danger for the individual, physically or psychologically. The only major disagreement is about the degree of such danger." One doctor expressed his feelings as follows: "The fact that Prohibition was a failure doesn't make alcoholism a good thing and the six million or so alcoholics we have are no bargain. Therefore, since there is no legitimate use for marihuana, it seems rather silly to legalize its use to initiate a second headache." (C)

On the other side, note that at a recent meeting of a psychiatric conference over half of 150 professionals surveyed said that marihuana should be made available with no more restrictions than pertain to alcohol. Seven out of every ten persons surveyed felt that the laws about sale and possession of marihuana should be changed in such a way as to either abolish them or make them less severe. (P)
A sore point for many marihuana smokers is the enforcement of the laws. Enforcement of the laws about the use and possession of pot has become expensive in the last few years. The FBI reports that in the period from 1965 to 1969 there was a five fold increase in the number of arrests due to marihuana use. For many police, this increase is no blessing. Some policemen contend that tracking down pot smokers is consuming too much of their time. Besides that, some don't think it does much good. As one county sheriff in Texas said: "Sending a drug user to prison is like sending him to a meeting of the lodge. That's where you compare sources and quality of drugs." (P)

In response to alleged enforcement problems, the opponents of legalization emphasize that we need to uphold respect for our institutions. The National Commission on Marihuana reflects this kind of thinking when it says: "For whatever reasons, a substantial majority of the American public opposes the use of marihuana, and would prefer that their fellow citizens abstain from using it. In the National Survey, 64 percent of the adult public agreed with the statement that 'using marihuana is morally offensive.' We are apprehensive about the impact of a major change in social policy on that larger segment of our population
which supports the implications of the existing social policy. They might lose respect for a policy making establishment which appeared to bend so easily to the wishes of a 'lawless' and highly vocal minority." (C)

Those favoring legalization come back by saying that respect for the law cannot be maintained when members of society are discriminated against. A case mentioned to support this idea is that of Michigan poet and political activist John Sinclair, who was given a ten year sentence for possessing only two marihuana cigarettes. Specifically, Stanford lawyer John Kaplan has said that: "Whether or not the police behave impeccably, their enforcement of the marihuana laws will bear unequally on different groups. As a result, marihuana enforcement heightens the sense of differential treatment, which contributes to the hostility of three groups that we might most wish to bring into the mainstream of our society: the alienated middle-class drug user, the high school youth, and the inhabitants of our urban Negro and Spanish-American ghettos." (P)

Should we legalize the sale and use of marihuana? This question is now being argued in our country. I can't tell you how to answer that question; you have to answer it for youself. Let's see how you would answer
that question now. Suppose you had the chance to vote on the question tomorrow. How would you vote? By a hand vote, how many people here would vote for legalization? How many would vote against legalization? How many wouldn't vote? (N)
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162


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